The Builder.

VOL. XLV. No. 2123. SATURDAY, OCTOBER 13, 1883.

ILLUSTRATIONS.

Timber Houses at Hildesheim 484
Selected Design for Roofing over the Courtyard of the Royal Exchange (Double-page Engraving).—Mr. Charles Barry, F.S.A., Architect ... 486
House at Stoke, near Coventry (South-West and South-East Views).—Mr. Wm. Hale, Architect 488, 493
Dining-Hall, Leys School, Cambridge (Double-page Engraving).—Mr. Robt. Curwen, Architect 490, 491
Rebecca: A Statue in Marble, by Girolamo Masini 497

CONTENTS.

Babylonian Architecture and Art 473
Successful Mediocrity 474
Filthy Hong Kong 474
Education of Body and Mind 476
The Rights of Insurance Companies against Insured Vendors of Houses 477
The Work of the Sanitary Inspector: Association of Public Sanitary Inspectors 477
Sanitation at Home and in the East 478
Art Education and its Application to Trade 479
Rules of Procedure in Public Competitions in Architecture and Engineering Abroad 480
Bristol and Clifton Junior Architects' Society 481
York Architectural Association 481
The Cornelius Saloon at the Berlin National Gallery 481
The Proposed Completion of Milan Cathedral 481
The Art for Schools Association 481
Timber Houses at Hildesheim 482
Covering to the Central Area of the Royal Exchange 482
House at Stoke, near Coventry, for Mr. Otto Striedinger 482
The Leys School, Cambridge 482
Rebecca: Statue in Marble, by Girolamo Masini 499
The Evolution of London 499
Penzance Natural History and Antiquarian Society 499
The Land Laws 499
Art as applied to Textile and Other Manufactures 500
The Improvements in Ave Maria-lane and Warwick-lane 501
Evolution in Art 501
The New Municipal Buildings for Glasgow: A Procession of Building Trades 501
Building Patent Record 502
Value of Public House Property in Farringdon-street 502
Sales of Building Estates 503
Provincial News 503
Dock Extensions 503
The Glasgow City Improvement Act and its Effect on the Health of the Inhabitants 503
The New Manchester Royal Eye Hospital 503
Miscellanea 503

Babylonian Architecture and Art.

THE city whose ruins M. de Sarzec has uncovered from beneath the mound of Tel-Lo was evidently a great and important centre of Chaldean religious life. Gudea, the ruler whose monuments and inscriptions are so numerous, and who so lavishly endowed and decorated the temples there, does not claim in any of his inscriptions the title of independent king, but that of Patesi, or Viceroy of the City of Sergulla. This Akkadian title of Patesi is a compound word, meaning "holder of the rod of office," and was conferred upon all local rulers who were responsible to the court of the king. We find this title assumed by the early rulers of Assur, whose brick legends are found in the ruins of the city, at Kileh-Shergat. It was rendered by the Semitic Assyrians by *Issaku*, for *insaku*, literally he "who has kissed," or submitted, referring in all probability to a system of induction into office, such as the kissing of hands now in use. From the inscriptions in the Louvre, and his royal signet seal in the Museum of the Hague, it is evident that Gudea was a near connexion of the royal house of Chaldea, whose court was at Erech, now marked by the neighbouring mounds of Warka. He also combined in his person the offices of viceroy, priest, and architect. In the first of these, his duties were, in all probability, similar to those of the Grecian *proxenos*, while his education and descent from the royal line conferred upon him the priestly office. The inscription upon the dress of the statue which represents Gudea in his character of chief architect, also shows his pious devotion to the gods. It reads, "To Nin-Sakh, his king, the statue of Gudea, Viceroy of the City of Sergul, who the holy temple has made. One measure of beer, one measure of food, one half-measure of fruit, and one half-measure of bread, each day the viceroy he has ordered. His petition may Nin-Sakh fulfil; [when] in the temple of Nin-Sakh his prayer he pours out, his prayer may he grant." This statue, which we have already described, is made of green stone, apparently diorite, while a second statue also inscribed with the names and titles of the king, but representing him in civil costume, is of red porphyry. In the long inscription on the statue the king states that he sent ships to the land of Magan to obtain "the hard stone which is in the land of Magan, to make his statues of." The land of Magan is frequently mentioned in the Assyrian and Babylonian inscriptions as being situated to the south-west of Assyria, and was called the land of the copper and blue stone,—that is the turquoise,—and on this ground most Assyriologists agree in identifying it with the Sinaitic peninsula, the Mafka "turquoise land" of the hieroglyphic inscriptions. The alluvial nature of Babylonia rendered stone a rare material, and so, with the exception of gypsum from the quarries near Mosul, or black basalt, which was brought chiefly from the land of the Hittites, the volcanic regions of North Syria and the Hauran, stone had to be obtained from a distance, and both diorite and porphyry are found in the Jebel Dokhan, the "Mons Phorphyrites" of Ptolemy, in lat. 27°.20′, a short distance from the Red Sea coast. We find some traces of this early trade route round the Arabian peninsula in the discovery of early Chaldean remains and antiquities on the island of Bahrien, in the Bahrien Sea, off the Arabian coast of the Persian Gulf. In 1879 Captain Durand, R.N., made a short visit to the island, and found it thickly covered with tumuli, which, on being opened, were apparently tombs. Built into the wall of a mosque he found a wedge-shaped black stone, bearing an inscription in very archaic characters, reading,—"The Palace of Rimugas, servant of the god Inzak, the viceroy." This indicated that in very early ages the Akkadians had planted a colony on the island over which a viceroy presided, and this colony, probably, was one of the stations on the coasting route to the Red Sea. The early naval enterprise of the Akkadians dwelling on the shores of the Persian Gulf have left their record in legend and inscription. The city from which the Chaldean Noah, Támzi or Khasisadra, the Zisuthius of the Greeks, came, was called "Suripak," or "the Ship City," while at the mouth of the Euphrates, near Ur, was the city of Ganganati, a ship city also, which was, according to a legend, invaded by ships from the Persian Gulf, in the reign of Gisdhubar, or Nimrod. It is possible that we may see in these early navigators the origin of the tradition of the ancient home of the Phœnicians being on the Persian Gulf. This early connexion with the great African power, which must have resulted from the trade with the Red Sea, cannot have been without its effect on Akkadian art, and may account in some measure for the great resemblance which some of the objects from Tel-Lo bear to the works of the first Egyptian dynasties. We know from the earliest Egyptian inscriptions how high an estimate was formed of the profession of architect. The Merket was often a prince of the royal blood, or if not of such exalted origin he was deemed worthy, as in the case of Ti, to marry into the royal family. The discoveries, however, at Tel-Lo reveal another important fact in the prominence, both in Chaldea and Egypt, given to the art of death. We know how the tomb-walls and coffins of the departed Egyptians were decorated with scenes illustrative of that strange journey of the soul in the under world. So the Chaldeans seem at an early period to have given artistic representation to the story of death. The chief monuments of this class are the statue of the Demon of Death, from Tel-Lo, a curious bronze figure, now in the Louvre, some fragments of a stele, discovered by M. de Sarzec, and a curious bronze funereal tablet, formerly in the possession of M. Pentie, of Beyrout. Coming, as most of these works of art do, from the necropoli of the south, the tomb land, for one of the ancient names of the south or south-east point was the "region of the house of death," explorations show that round most of the ancient cities of Chaldea, as at the present time round the wall of modern Oriental cities, were the cemeteries in which the dead were buried. It has long been a moot question among Assyriologists as to the mode in which the ancient inhabitants disposed of their dead, but a sculptured stele discovered by M. de Sarzec at Tel-Lo seems to at last answer this question. Among the monuments recovered are some portions of an ancient stele, or obelisk, on which are represented certain incidents in the life of one of the kings of Sergulla. Three of the portions, however, are of great value, mutilated as they are. In one fragment we have represented the field of battle after the combat, dead bodies are lying about on the ground, and above fly the eagles or vultures ready to devour the slain. This scene we find afterwards frequently repeated in the art of the middle and late Assyrian Empire, as in the sculptures of Assurnazirpal, from Nimroud, and those of Sennacherib, representing the Babylonian wars. The race whose bodies are thus lying about are a short thick-set people, with curly hair, bound with a fillet. In the lower tier we have a most interesting group, representing a funereal scene, in which the dead of the victorious side are being buried. On the field of battle the bodies are heaped up, while men are engaged in carrying baskets of earth to raise a great tumulus over them. This scene reminds us of the Homeric burial on the field of battle, and may account for the numerous small mounds scattered round the walls of the ancient Babylonian cities. This mode of disposal of the dead is referred to in the great Babylonian epic of the Deeds of Gisdhubar, or Nimrod, for in the ninth tablet-book of that epic the hero is told to go to the forest land of the pine trees to clear a space, dig, bury, and make a tumulus over his companion, the Satyr Heabami. It is possible, as pointed out by the late George Smith, that cremation was practised among some of the numerous races, who occupied the Tigro-Euphrates valley. A third portion of this stele reveals a curious fact, which explains, in all probability, the emblem of the double-headed eagle, which we find both in Oriental and Occidental art. On one fragment we see the king with his royal tiara, or crown, a high round cap, such as we see on the monu-

ments of Nebuchadnezzar I., and Merodach-Nadin-Akhi, holding in his hand a royal standard of an eagle, with outspread wings. This explains the eagle upon a staff, which appears upon so many of the memorial stones and gems in the British Museum collections. It is clearly the emblem of the victorious tribe, whose warfare we see depicted on the stele. In early records of the kings of Chaldea we find the kings assuming simply the titles of ruler of this or that city, but soon they assume the wider title of rulers of Sumer and Akkad, that is, of the north and south division of the empire. It was probably the dual nature of the empire which gave rise to the double eagle as symbolic of the double empire. This symbol was borrowed from Babylonia by the Hittites, upon whose monuments at Boghas Keui it occurs. An examination of the treasures from Tel-Lo clearly shows the source of much of the Babylonian influence in the Hittite or pre-Hellenic art of Asia Minor. We have already pointed out that this art showed many traces of Babylonian influence, but few of the conventional art of Assyria. And here we have the characteristic feature of the art remains from Sergul. The sculptured heads and animal forms, especially the former, are free from the stiff canonical conventionalism of the art of the later periods, when under Semitic influence, in which we have a parallel with the early art of Egypt. The wooden statues of the Sheik-el-Belad, or the Seated Scribe, exhibit a freedom which is entirely obliterated in the works of a later period, and the very freedom which so astonishes us here in these wonderful statues is lost beneath the pressure of stern priestly conventionalism of a later age.

SUCCESSFUL MEDIOCRITY.

"Why do incompetent architects thrive in Paris?" asks a writer in M. César Daly's excellent *Revue*, and the question sounds like the echo of a problem which three thousand years ago perplexed the Royal Psalmist. He, too, saw the unworthy "in great power and prosperity, their eyes swelling with fatness; that the people fell unto them, and that thereout they sucked no small advantage," and he was amazed at the sight; he recurs again and again to the puzzling anomaly, and confesses it is too hard for his understanding; and descants on its perplexing strangeness. "Paris," says the French writer, in his brisk, entertaining way, "is the home of mediocrities," and mediocrity in Paris appears to have, on the whole, a very good time of it. A provincial architect must be an architect in something more than name. He must personally direct the builder and his workmen in the details of the operations they perform for him, and he has no one at his elbow on whose assistance he can rely, or whose knowledge can at any moment be made available to supply such an architect's deficiencies. In Paris he is at no such disadvantage. The contractors there are themselves fully educated in all building processes and alive to architectural requirements. There are skilled clerks (draughtsmen) to serve every turn, and always at ready command; and there are measurers (quantity surveyors) always at hand to advise on practical questions and help a lame architect over a stile. And so it happens that in Paris much architectural work falls into the hands of men whose only qualification lies in the possession of that business tact which enables them to secure the commission and organise the forces by which it is carried through.

The necessary attainments for the architect proper are said to be (*a*), a training in art in order that he may give to the buildings for which he is responsible a suitable and agreeable form; (*b*) a knowledge of mathematics sufficient for the calculation of the strains to which his structures will be subjected and for providing for them scientifically; and (*c*) a practical acquaintance with building materials and building operations. To these the writer alluded to adds a fourth requisite, more necessary in Paris than all the others, viz., the science of obtaining and managing a client. This is of chief importance: without it the rest are useless, and with it all the others can be "borrowed,"—that is, purchased or hired.

But not of Paris only is this true, and not alone in Paris are those to be met who "go about to *cozen* Fortune, and be honourable without the stamp of merit." If for Paris we read London the writer's query will be equally pertinent. It is nothing less than astonishing to one who is able to discriminate between good architecture and bad that the authors of so much bad work contrive to secure a succession of employment, and that, too, on works of the first importance. We have been using this "breathing time" of the year in making a tour of the metropolis in order to see what is doing, and how it is being done. And our rambles have been, on the whole, attended with the highest gratification. At no time within our memory has there been more original or refined work going on than at present. It would really seem as if we were at last on our way to the evolution of a new style or series of styles adapted to our age and wants: at any rate, it is becoming increasingly difficult to answer the layman's question,—"What is the style of that building?" Our works are beginning to show "style" in its proper sense. We can point to façades in business thoroughfares marked by Greek feeling and refinement without a single ancient feature or a single borrowed detail; and to others which have all the play and fancy of the best Renaissance work, with yet a distinctively home flavour; and again to others which preserve all the picturesqueness and variety of Flemish originals without any of the original irrational puerility. And in all we see a stern regard to the demands of business. It is also quite apparent that the works alluded to are really the productions of the architects whose names are publicly associated therewith. We can trace their hands in each example, and see in each the idiosyncrasies of its author. Just as a painter can assign an author to every picture in an exhibition, so can any one who is conversant with contemporary architecture assign with perfect certainty an author for each of the more noteworthy of the buildings he encounters. And this still can be done notwithstanding the barefaced imitation and purloining of characteristics to which all such work is subjected by followers more flattering than honest.

But, side by side with so much excellent work, there are structures marked by every fault to which architecture is amenable; ill-proportioned, ill-designed, ill-constructed, they meet us at every turn, "blasting their wholesome brothers." These are the works of mediocrity, and they abound. Their authors are the possessors of that fourth requisite in the list of attainments, and to these we would ask permission to address a few words. There are "ghosts" in all professions. It was a maxim of the late Sir H. Cole,—and one to which he believed he owed much of his success,—never to do himself what could be as well done by a deputy. Vicarious architecture is known to exist. An accident disclosed the fact some few years ago in a memorable competition, and its disclosure was attended with circumstances which gave it a pretty wide publicity. The mistake was in the attempt to deny it or explain it away. There is nothing iniquitous in getting that done by another which can be as well done as by yourself, and none in getting another to do that which he can do *better* than you. The sin is in the concealment or disavowal. An architect has a right to manage the business which his tact obtains in his own way so long as his client is not a sufferer, and it would enhance our respect for his tact if he would delegate the duties in which he is incompetent to those who are really efficient. There are firms framed on this principle, and it is known that the work which goes in their joint names is obtained by the one and designed by the other. But this is where we quarrel with our imperfect architects whose works are a blemish on the art of the age. They cannot design them, and they go to others who are scarcely more efficient than themselves, while they are all the while surrounded by numberless young men who have all the ability the successful man lacks, although unfortunately none of that quality which has brought him success.

The various architectural societies, schools of design, and similar institutions, are calculated to produce clever designers and draughtsmen, but they have no machinery for producing good men of business; and they are generally resorted to by young men who have not that social position which will ensure a remunerative *clientèle*. In looking over the lists of the more popular of these societies, you cannot but be struck by the number of members, or help seeing the danger of the market being flooded by a crowd of young men whose only qualification is a facile use of the pencil. Their work of this sort is of high average merit; in many instances it is of rare excellence. Indeed, it is notorious that London abounds with clever youths with marked skill in both design and draughtsmanship, who are about as likely to obtain a succession to the throne as an independent architectural practice. *L'outil à l'ouvrier.* There is no excuse for the employment by the merely nominal architect of equally incompetent representatives; it is a misuse of what would be otherwise an allowable exercise of his discretion in the conduct of his affairs, and from being a perfectly innocent arrangement becomes a fraud upon his client.

Either the mere man of business tact is without the faculty of distinguishing between good architecture and bad,—in which case he is an impostor and the public is a sufferer without remedy,—or he allows pecuniary considerations to operate to his clients' disadvantage. Competent aid must be and should be adequately rewarded,—with the proper reward it is always forthcoming,—and when an architect of the class to which the French writer refers builds an inartistic structure it is probably either because he is too ignorant to know good from bad or too parsimonious to pay properly for the ability in which he is deficient. We grudge him his success both ways. But for his *confrère* who calls in the best aid obtainable in support of his acknowledged defects,—what can he do more? He is helping along younger men who would do nothing if not encouraged by his patronage. We wish him all the success he deserves. May such mediocrity continue to thrive both in London and in Paris.

FILTHY HONG KONG.

Active measures are in contemplation, and have, indeed, been actually commenced, with a view to remedy the notoriously insanitary condition of the town of Victoria, in the island of Hong Kong. Last year the Government commissioned Mr. Osbert Chadwick, C.E., the son of the veteran sanitarian, to proceed thither and to report upon the whole subject. The result of his labours has been laid before Parliament in the form of a Blue Book, and supplemented by further details and recommendations. The full report, extending with its appendices to sixty pages, and illustrated by numerous plans, will be read with interest by all who concern themselves with this important subject, and with special interest, and, we may also say with profit, by those who are personally engaged in sanitary work. Our pages have been, from the first, open to the discussion of all questions affecting the health and well-being of the people at large; we have consistently advocated every enlightened measure of sanitary and social progress and reform, and we shall therefore make no apology in proceeding to lay before our readers, with the permission of the author, the substance of his report.

The island of Hong Kong lies at the mouth of the Canton river; its longer axis, running east and west, roughly measures eleven or twelve miles, and its width is about four miles. It is separated from the mainland by a channel which varies from about one-third of a mile at its narrowest part to about three miles at its widest. The island is a granite rock which, rising abruptly, reaches an extreme altitude of 1,825 ft. above the sea-level. The coast line is picturesquely broken into a multitude of small bays and harbours, and the surface of the rock is covered with a thin soil and a scanty herbage. The city of Victoria lies on the north side of the island, along the sweeping line of Victoria Bay, and extends to between three and four miles in length. In width it ranges from a hundred yards to about half a mile. It is founded upon a deep mass of decomposed rock, and its site can only be extended by reclaiming the foreshore in front, or scarping the hard rock in the rear. The result is such a system of close packing of human beings as can, perhaps, nowhere else be found, and of life under conditions which are, happily, rare, if not altogether unique. The population number 130,000 souls.

The Chinaman's house,—like everything that is his,—conforms to a traditional and almost unvarying type. Not wholly so, however, for want of space in Victoria has obliged him to build with upper stories, which he never

does elsewhere. It consists of a rectangular enclosure, 60 ft. by 16 ft. or thereabouts, with a narrow slice cut off at the back about 6 ft. or 7 ft. wide. The lower or ground floor is used as a shop or work-room, and from it a stairway leads to an upper room, which is divided by partitions into cabins or cubicles. Sometimes there is another floor over this, similarly divided, and there is nearly always a cock-loft under the roof. The main apartment is of considerable length, and is lighted only at one end. The slice cut off at the back of the plot is called the "cook-house." In many cases the houses are built back to back, and the cook-house gets what light it can down the opening which is made for the exit of the smoke. The slope of the ground is such that many of the houses have an extra story in front. Except in this sense, basements are unknown. The common bricks used are made at Canton, and are of poor quality. Granite is used for floors and window-dressings, and sometimes for ashlar fronts. The roofs are covered with tiles somewhat resembling the ordinary Italian tiles, and their ends are decorated with porcelain antefixæ. The lower floors are sometimes laid with unglazed tiles, and sometimes they consist only of rammed earth. The upper floors are of fir planks laid upon poles for joists, a little flattened top and bottom to receive the floor and ceiling.

The "economy" of a Chinese household is brought before us by the report with startling clearness. The lower floor is used as a shop or work-room, and is occupied during the night as a sleeping-apartment by the master and his assistants; the front next the street being completely closed by tightly-fitting shutters. In each of the "cubicles" on the upper floors a whole family may generally be found; these cubicles are about 10 ft. square. Each floor is leased to a separate tenant, who sub-lets portions of it. We remember in an East-end lodging-house finding that each corner in one of the rooms was let to a separate family, and that there was a single man in the middle,—and really in Hong Kong this seems to be repeated. In one house, not exceptionally crowded, there were five families with a cubical space per inmate of 437 ft. 6 in. In another house, "above the average in point of accommodation," the ground-floor was divided into four cabins, each occupied by a family; the first floor was similarly divided, and occupied by thirteen persons, and the second floor by eleven persons. This system reached its furthest point in some lodging-houses, where 428 persons were found inhabiting eight cottages, — leaving for each inmate only 230 cubic feet of space. Notwithstanding this mass of human beings thus huddled together, "anything in the shape of a privy or ashpit does not exist." There is sometimes a pot, enclosed by a few rough boards, in the cook-house,—that is all. The cook-house itself is used as a kitchen, latrine, urinal, and general refuse-hole; it has frequently no windows and is so dark that you have to feel your way about; its only ventilation is by the "smoke-hole"; and its floor is sodden with accumulations of every kind of filth. In this cheerful apartment some member of the family not unfrequently sleeps!

In Hong Kong the men are to the women as three to one, and it is fortunately the custom for the men to resort to public latrines. These institutions are farmed by contractors, who find in them a valuable property, and whose interest it is to keep them clean. It has been thought that the Chinese were the inventors of the dry-earth conservancy; but it is not so. They do not use earth to mix with the excreta, but sand; and not for the purpose of deodorising it, but in order to facilitate its collection and removal. It is shipped and sold on the mainland for manure. An excessive admixture of foreign matter is avoided. There are no means of ascertaining the money value of the commodity; but that value must be considerable from the eagerness with which the contracts for its removal are sought.

The women of each household use an earthen pot, which is kept in the living-room awaiting periodical removal by paid coolies. The times of removal vary from once a day amongst the well-to-do, to once a week amongst the poor. The dangers attending such a system are obvious, seeing that decomposition sets in within twenty-four hours of evacuation.

The "slops" and waste, and the numberless and nameless impurities of the cook-house, find their exit by a sink-hole into badly-built and leaky drains, which finally discharge a portion of their contents into the bay. When the drains are choked, which is no uncommon occurrence, the refuse lies about the cook-house floor, and soaks into the already filth-charged subsoil. The sewers discharge above low-water mark, and the whole foreshore is one fœtid swamp.

When the blocks of houses are so built as almost to touch each other, the narrow interval serves as a receptacle for filth of all sorts; and when there is some pretence of draining the houses, such drains cannot be traced beyond a few yards from their source, but are lost in obscurity.

Here, then, are all the elements of disease. The houses of the wealthy are destitute of all the safeguards of modern sanitation. The Chinese poor are overworked, overcrowded, and underfed. Almost all the conditions essential to physical and moral well-being are absent, and they are surrounded by every conceivable incentive to moral and physical disease.

It is not surprising that filth fevers in all their numerous varieties are found; but there are many difficulties in the way of ascertaining the extent of their ravages. The proportion of the sexes before adverted to reduces to an insignificant figure the number of births, and the infant mortality, which swells the ordinary tables, renders them inapplicable as a test. Moreover, the population is, for the most part, migratory and shifting, recruited from the healthiest and most enterprising amongst the dwellers on the main land. Victoria is, in fact, a vast lodging-house. The residents have only one object, and that is to accumulate by labour and thrift sufficient,—and very little is sufficient,—to enable them to return and pass the end of their days in the village of their birth. Hence the deaths due to old age are eliminated, and, speaking broadly, those which do occur are the deaths of men and women in vigorous middle life. The Chinese spend their days in the open air, whatever their lodging may be at night. They work, buy and sell, and conduct all the operations of their vocations which can be so conducted outside their houses. This habit, which is universal, goes far to correct the effects of the poisonous air of their sleeping-rooms. Still, in the face of the imperfections of the registers, occasioned by the unconquerable reticence of the Chinese poor, and their repugnance to having their privacy invaded, and notwithstanding the select nature of the "lives" recorded, the death-rate, which varies in London from 16 to 21 per thousand, is in Victoria from 26 to 30; and the mean age of those who die over 20 in London being 56, that in Hong Kong is only 43.

Mr. Chadwick points out that the settlement is not yet forty years old, that the foundation of the city is an absorbent sponge-like mass which may not yet have become saturated to the pestilence-point; but that some terrible scourge is imminent and certain if matters are allowed to remain in their present position. The authorities are showing themselves alive to the meaning of the facts disclosed, and are bestirring themselves accordingly.

The works recommended are divided into (*a.*) The provision of more air, by the regulation of new buildings, and, where possible, the improvement of the old; (*b.*) The provision of an abundant supply of pure water; (*c.*) The effectual and innocuous removal of excreta and other waste.

Under the first head little can, it is feared, be done, owing to the restricted space which the city occupies, and the difficulty of dealing with this part of the subject is as yet unsurmounted even in theory.

An efficient water supply is even now being provided by the new Tytam-took Waterworks, which, with the existing works at Pokfullum, will furnish a daily supply of 2,500,000 gallons, or about 20 gallons per head per diem. In addition to this the waters from the streams and nullas near the town can be utilised for street cleansing and other than domestic uses. In order to check waste, and as the most equitable arrangement, it is proposed to make the payment for water be regulated by meter, and it is thought that this may be effected without reducing imprudently that free use of water which is desirable in all tropical climates. In England the supply of water by meter has not found favour, but it is in use in Vienna, Brussels, Berlin, and the larger German towns, and the system is gaining ground on the Continent. Mr. Chadwick has drafted a "water ordinance" for the regulation and administration of the water supply, and to this he has appended, with critical and explanatory notes, the elaborate code of regulations in force in Berlin.

The question of the removal of the excreta is increased in difficulty by the peculiar local conditions of the problem. The dry-earth system is inapplicable because, roughly speaking, there is no earth (*humus*) available. And if there were, that system, as has been so often pointed out, does not satisfactorily provide for the removal of the far greater volume of domestic filth, both solid and liquid. Hence the old objection faces us. In providing for the former the latter is undealt with, and in dealing with the latter the former may as well be included.

The report is in favour of water-carriage in the abstract. But it would never do to employ the present defective system of sewers, and the matter cannot wait until a complete and comprehensive system of drainage and sewerage is determined upon and carried out. Moreover, with the Chinese, custom is everything, and existing customs must not be rudely interfered with. On the whole, the recommendations run as follow:—

1. The retention, acquisition by the Government, extension, and improvement of the system of public latrines for men's use. These to be thrown open to the public gratis. At present a "cash" is charged each person, or two "cash" if a cigarette, &c., be provided. The provision of public urinals: at present not one exists in the whole city. The provision of better means of emptying and cleansing house-pots. This is now performed in the streets, and if that were forbidden, the already overtaxed "cook-house" would have an addition to its long list of uses.

2. The provision of dust-boxes, to be periodically emptied by public scavengers; and, in suitable positions, a kiln or kilns for the destruction of the refuse.

3. The provision of public markets, which should not, as now, serve as "casual wards."

4. The provision of public baths,—for the Chinese labourer, we are surprised to learn, daily sponges himself all over with warm water when he has the means of doing so.

5. The establishment of public laundries,—a great want.

And, finally, a well-considered and thorough system of main sewers, with an outfall at or near the Sulphur Channel; and a subsidiary scheme of house and street drainage on the most approved modern plan.

The lithographs, which Mr. Chadwick gives with a liberal hand, show methods of drainage adapted to varying local conditions, and suggest improvements in the public latrines adapted to the usages of Asiatics, "who do not and *will not* use seats."

There is no doubt but that all the elements of plague and pestilence have been gathering about the dwellers in Victoria, and it is a matter of sincere congratulation to the whole civilised world that the warnings which this report conveys have been taken to heart by those whom it concerns.

The impression left upon our mind by a careful perusal of this interesting report is eminently favourable to the Chinese, who appear to have,—with their numerous vices,—some hitherto unsuspected virtues. They are not so obstinately and immovably wedded to usage as one has been led to believe, but are amenable to changes which can be shown to be improvements, and they are intelligent enough to appreciate real reforms. They are industrious, ingenious, frugal, thrifty, and, so far as their opportunities go, cleanly. They have had hard measure meted out to them; but under improved treatment, and in improved circumstances, they would themselves probably show a marked and rapid improvement. They are firmly attached to the strong, yet gentle rule of this country, and it behoves us to retain the loyalty which we have secured; to promote the general good of the infant colony; and to guard it against preventible evil.

The New Theatre at Valparaiso.—In the competition for this theatre, to which reference has been made in these columns, ten architects took part, three from Chili, three from Germany, two from France, and two from Italy. Premiums were obtained by the architects Fehrmann (Chili) and Maillart Norbert. The design of the architect Alfred Schulz, of Berlin, was purchased for 73*l.*

EDUCATION OF BODY AND MIND.

The progress of science during the past and present years, in so far as it is indicated by the proceedings of the British Association, has rather resembled the quiet and gentle, but wide-spread, rise of a flood over a broad river valley, than the impetuous course of the torrent that supplied the water as it rushed from its mountain cradle. The change, we apprehend, is partly real, and partly only apparent. In different parts of the scientific field such gigantic steps have been taken within the past few years, that it is far more necessary to secure and make the most of the ground that has been thus gained, than to attempt as yet to use it as a base for further advance. In electricity, in metallurgy, in various branches of applied mechanics, this is certainly the case. The extraordinary activity of the inventive faculty, as applied to the perfection of detail, was well illustrated in the Exhibition of Engineering Appliances at Islington. The proceedures of the assembly at Southport tell the same story.

At the same time, it must be remembered that the British Association no longer affords the same exclusive field for the first display of nascent invention that it did in years past. With the increasing specialisation which is the great feature of the day, each branch of science, —almost each department of thought,—has developed its special organ or organs. Men feel that they cannot wait for the chance of a good audience on some day in September to usher their newborn ideas into the world. They have their local theatres of display,—institutions of various sorts; special journals. And where the subject, indeed, is one likely to command public attention (and that quite irrespective of its practicability) the daily press will find room for long, —though sometimes very one-sided,— articles of description. Thus, for very many reasons, the relation between the list of agenda for such meetings as those of the British Associations and the real progress of contemporary science is undergoing a steady, and possibly a permanent, change.

Nor do we think that a different opinion will be formed, by those who ponder what was actually brought before the Institution, from that which results from the comparison of the present year's work with that of years now past. More than one paper would,—it seems to us,—have been far more in place if brought before a local or a special audience, than as submitted to the Parliament of Science. It may, indeed, be said that freedom of initiation is a necessary part of freedom of speech, and that to restrict either would be to diminish the source for good of an important engine. And, in fact, we can point to instances in the records of institutions of more limited and special range than the British Association, in which papers have been brought forward only to meet with a tolerably unanimous condemnation. Let us add that such a condemnation, when just, is about the greatest benefit that can result from free and competent discussion. At the same time it may, perhaps, be thought that such a subject as the mode of working slate quarries would be more suitable to a more directly industrial audience, or to form the subject of a book,— (and we have called attention before now to a very good book by Mr. Davis on the subject),— than to bring before a section of the Association. As to this, indeed, it is pretty clear that the meeting thought so too.

The subject which probably was brought forward most successfully of any treated by the Association was that of telephones, by Sir F. Bramwell. This is, indeed, a fact fully in harmony with the views that we have expressed. Rapid as has been the development of this most ready mode of signalling, it is in those minute details on which success so much depends, and not on any new discovery of a theoretic nature, that the day-by-day advance of this youngest-born of science depends. Thus it is rather as a popular lecture, than in any other way, that Sir F. Bramwell's paper was so successful. The writer, in fact, gauged the tone and temper of his audience; and when a man is at once master of his subject, and appreciative of the feelings of those to whom he is to introduce it, he has the first elements of a successful speech.

On one undertone, which was audible not only in one or two, but in many of the most important papers, we think that the country is to be congratulated,—to say nothing of any sense of satisfaction that we may ourselves experience in having been among the first to lay the matter before the public (see "Education or Stupefaction," *Builder*, June 16th, 1883). We refer to the views expressed by the most competent men that we are altogether astray in our regulation of compulsory education. This is one of the points in which the unexpected *consensus* between the more serious organs of the Press and the more eminent contributors to the proceedings of the Association during the present year, is very significant. The high authority of the *Lancet* is here altogether with us. "The brain," says this medical counsellor, "of a child of ten or twelve, even under the best conditions, is not usually equal to much in the way of elementary mathematics, of languages other than the every-day tongue, or even of that favourite school study, physiology. In regard to all such subjects there should be no pressure. We do not know that ill effects in this direction are to be measured by the statistics of brain disease. A child's health may suffer from want of timely play or fresh air without any signs of mental alienation. There is many a strumous child in Board schools. Can any one say whether tuberculosis or meningitis has increased under educational pressure?" We may add to what we have before stated on this subject the testimony of a very able physician to the effect that he has known partial paralysis to be remarkably developed among those more successful scholars who are "run" by the schoolmaster.

As to this vital question, the discussion before the Economic Section on the 25th of September illustrates both sides of the problem. "That each teacher shall adopt a scheme of elementary science in the form, prescribed by the Code, of a progressive course of simple lessons adapted to cultivate habits of exact observation, statement, and reasoning," seems to us a subject for a circular rather to the Board School teachers of Jupiter and Saturn,— if such there be, and if intelligences ascend with outward movement in the planetary scale,—than for those of the England of the nineteenth century. The words of the *Lancet* seem to us wiser than those of the circular. Not that these things are not to be taught; but that they are not to be taught, even to the most competent, by books and lessons. Habits of observation are to be obtained by the country child outside the schoolroom. We doubt whether they will be attained by the urban child within it. And what progress does not the word "statement" anticipate? We are advised to teach the ordinary English child the "distribution of plants and animals and the races of mankind; or light, heat, electricity, and their applications"! What sort of sympathy with the real wants of the nation does such a "standard" betoken? We sympathise with Miss Becker when she speaks warmly in depreciation of "especially the teaching of grammar and the nice distinction between a preposition and an adverb, while the principles which underlie the things of their daily life are altogether ignored." Not that the "distribution of plants and animals" is one of these. In the abandonment of text-books for oral teaching, at Birmingham, we see something of a move in the right direction. But as to the special fitting of the education, as far as it goes, to the probable future of the child, we see less and less; and the more vigorous is the attempt to give a general, and, as far as possible, an encyclopædic education, the less will be the benefit obtained from the teaching and discipline actually employed.

Here, again, the discussion of the Anthropological Section comes in. "From the top of the social scale downwards," said Sir R. W. Rawson, "there is a gradual descent in weight, stature, chest-girth, and all the elements of strength. Therefore, what they had to aim at was to improve the nurture and surroundings of the less favoured classes, so as to bring the lowest up to the condition which all might reach, if they have the means." Truly so, but this is not to be done at the risk of cerebral disturbance, meningitis, and facial paralysis. "The height of artisans in towns," writes Mr. J. P. Harrison, "is 66·51 in. between the ages of twenty-five and thirty-five, while that of country labourers of the same age is 67·53, the difference being only a little over an inch." Only! and that in presumably the worse fed and more neglected class! But what does this inch mean? Not one sixty-sixth, or three-quarters per cent. difference, but the difference between the cubes of these numbers; that is to say, one-fourteenth, or seven per cent. Is that nothing? But let any one who would study this subject take the simple rules of the Greek Anthropometry (see *Edinburgh Review*, No. 285, The Canon of Beauty in Greek Art). Let him take one test, the proportion between the height and the chest girth. In the truly-proportioned form the chest girth is equal to four-sevenths of the height; how often is that attained among us?

Again, in Sir R. Rawson's paper it is stated that "boys at the age of fourteen are nearly 7 in. shorter of stature and 24¾ lb. lighter in weight," on the average of the children of the poorest, as compared with those of the richest classes. The height of the ordinary well-grown German boy at fourteen, according to carefully-compiled German statistics, is about 92 per cent. of his full height at maturity. Taking Sir R. Rawson's average height for the Saxon counties,—Sussex, Berks, and Oxfordshire,— which is 67·22 in., the height at fourteen years of age ought to be 61·84 in. Reduce this by seven, or to 54·84 in., and then compare the cubes of these numbers. Leaving out decimals, they are as 23 to 16. What does that tell us of the stunting effect of the want of the proper conditions of healthy growth during the first fourteen years, in which the physical structure of the future man is so far sketched out, and the measure of his strength and capacity is lined out? And it is on the class thus heavily weighted in the competition of the battle of life that the additional pressure of an intellectual training, for which there is no hereditary aptitude, and for which there is no intelligent demand, is now imposed. Does it not seem as if,—with the best intentions, no doubt,—our school-boards and their counsellors were sometimes working in exactly the wrong direction? To perfect the *mens sana in corpore sano* is one definition of the true aim of education. What we do for the body we can measure and we can weigh, year by year; and the study of anthropometry has thus a high political value, in the true sense of the word. What we are doing for the mind we can only guess. We attempt to probe it by examinations, but that is something like drawing physiological conclusions from vivisections. Not only are examinations deficient utterly in one of the most important of all points, —that of testing either the permanence of educational effects or the use which the child can make of what he can remember till he is examined, if no longer; but supposing that they do measure the amount of definite cram mastered by the child, the question of what use it will be to his future career remains entirely untouched. Thus we see, on the one hand, the conditions which plainly and unmistakably improve the body; on the other, those which questionably may improve the mind at the expense, as experts tell us, of the body. Can there be any doubt which set of conditions must be regarded by a statesman as the most needful to improve? Or should there be any hesitation in admitting the assertion that, before imposing on the peasant child an educational pressure which has been found to need careful supervision to prevent its aggravating the imperfections of his already stunted *physique*, the *cui bono* should be fully made clear? Ill would it become us to undervalue education as the great pioneer of civilisation and of scientific progress. But the question of what is the proper mode of educating special classes or special individuals for that position in life of which they can most naturally, and therefore most efficiently, discharge the duties, is one that appears to us to have been almost wholly left out of sight in the organisation of the compulsory education of the last decade. So much so, indeed, that in the opinion of competent judges,—we withhold our own,—more harm than good is in many instances very often effected, at enormous cost.

London International Exhibition, 1884. We understand that Mr. G. C. Levey, C.M.G., the Executive Commissioner representing the directors of the Crystal Palace Company, visited the Cork Exhibition last week for the purpose of arranging an Irish Court at the forthcoming exhibition. Mr. Levey was introduced to the Cork Executive Committee by Mr. O'Sullivan, M.P., and his mission is warmly approved of by Sir George Colthurst, Dr. O'Sullivan, and Mr. L. A. Beamish, who promised to render Mr. Levey every assistance in their power in forming an Irish Court at the Crystal Palace Exhibition, thoroughly representative of Irish manufactures.

THE RIGHTS OF INSURANCE COMPANIES AGAINST INSURED VENDORS OF HOUSES.

In the course of last year, Mr. Justice Chitty delivered a jndgment in the case of Castellani *v.* Preston, which laid down a most important rule in regard to the insurance of houses. The facts were so short and simple that, though we mentioned them in a previous article, it may be well to state them again. The vendors of a house and land iusured it with the Liverpool, London, and Globe Insurance Company. Between the time of making the contract of sale and the completion of the sale the house was burned down, and the vendors were paid a sum in respect of the insurance by the company, and subsequently the purchasers paid the full price for what may be called the damaged property. Naturally, when the company discovered that the vendors had been, in fact, not in any way injured by the fire, they sought to recover back from the vendors the sum which the latter had received, and it was this sum which Mr. Justice Chitty held that they could not recover. As we pointed out at the time, this judgment, though most elaborate and most lengthy, was, in our opinion, wrong; for it was obviously contrary to all accepted principles of the contract of insurance that a person should actually benefit by a calamity, when the intention of the insurance was simply to indemnify persons interested against the results of the mishap. As we anticipated, the Court of Appeal has now reversed the judgment of Mr. Justice Chitty, and in doing so has laid down a rule which is as plain as it is important. "I hold," said the Master of the Rolls (Sir Baliol Brett), "that if a right of action in the assured has been satisfied, and the loss has been thereby diminished, then it would be contrary to the doctrine of subrogation to say that the loss is not to be diminished, as between the assured and the insurer, by reason of the satisfaction of that right"; and again in the last part of his judgment the same Judge says, "According to the true principles of insurance law, and in order to carry out the fundamental doctrine, namely, that the assured can recover a full indemnity, but shall never recover more, it is necessary that the plaintiff in this case should succeed." As Lord Justice Bowen says, the principle to be looked to as a guide, "the infallible rule," he calls it, is "that a man can only be indemnified to the extent of his loss," and *à fortiori* if a man has lost nothing, and is paid by assurers, under the impression that he has lost something, then they may recover it back from him; for if he retains it it would be a violation of the fundamental principle of insurance law. "Suppose," says Lord Justice Bowen, "that only 50*l.* remained to be paid of the purchase-money, and that a house had been burned down to the value of 10,000*l.*, would it be in accordance with any principle of indemnity that persons who were only interested and could only be interested to the extent of 50*l.* could recover 10,000*l.*? They would be getting a windfall by the fire; their contract of insurance would not be a contract against loss: it would be a speculation for gain. Then what is the principle which must be applied? It is a corollary of the great law of indemnity, and is to the following effect: that a person who wishes to recover for, and is paid by, the insurers as for a total loss cannot take with both hands. If he has a means of diminishing the loss, the result of the use of these means belongs to the assured. If he does diminish the loss he must account for the diminution to the assurers." These extracts will make the principle upon which the judgment of the Court of Appeal is based clear to every layman, and will show the broad and simple grounds on which the judgment of Mr. Justice Chitty was reversed. This judgment of the Court of Appeal brings out conspicuously the fundamental rule which must be looked to in all these questions of insurance, and it likewise lays down a particular rule when the general principle comes to be applied to the particular facts of the case. It shows that vendors of house property cannot make a gain of the loss of their property by fire after a contract of sale has been signed, but, on the other hand, it shows that the purchaser has no right to the insurance money. He is, in fact, the only person who suffers, for he is bound to pay the full value of the property, and is consequently in the position of the insurer. It becomes still more obvious, therefore, as we pointed out in our previous remarks, that the purchaser of house property should do one of two things. He should either stipulate that after the contract of sale is signed, and before the conveyance is completed, he shall have the benefit of the vendor's policy, or else he should at once insure the property himself and so guard against loss. If he does not do this he is certain to be a sufferer in case of loss by fire, whilst the vendor and his insurer are untouched by the particular accident.

THE WORK OF THE SANITARY INSPECTOR.

ASSOCIATION OF PUBLIC SANITARY INSPECTORS.*

The inaugural address of the Chairman of this Association, Mr. G. B. Jerram, of Walthamstow, was delivered on Saturday evening last at the Holborn Town-hall, when there was a good attendance of members.

Mr. Jerram, in commencing his address, referred to the fact that when the members of the Association last met there was much excitement as to the apprehended visitation of cholera to this country. The scare had in some degree roused local authorities from their usual lethargic state, and medical and sanitary officers and surveyors had been enabled to get improvements made and necessary sanitary works executed. So far the scare had done good, but it was to be feared that now the alarm was subsiding the local authorities would once more sink into the slough of red tape and inactivity, and nothing further would be done in the way of sanitary improvement until the next alarm of an approaching epidemic. It was, however, satisfactory to note the increased interest which the public were now taking in sanitary matters,—a circumstance due in great measure to the efforts of such sanitary reformers as Mr. Edwin Chadwick and Dr. Richardson, to the holding of health conferences, and to the information that had been spread by members of the Sanitary Institute, Parkes Museum of Hygiene, and other kindred societies. No amount of sanitary inspection would be effectual until the public generally were conversant with the general laws of health, and until they were alive to the fact that it was the duty of each individual to take those measures which would conduce not only to the health of himself and his family, but to the protection and safety of the community in which he lived. During the past few months, many local authorities had taken more than usually vigorous steps to ascertain the sanitary condition of their districts, and in a great number of places it had been found necessary to engage additional inspectors to assist the permanent staff in their duties. This fact alone served to show that at the present time effectual sanitary inspection is rather the exception than the rule. The public would be interested in knowing something as to the qualifications and duties of the men engaged in this important work. It was to be feared that in many cases men had been appointed who were quite ignorant of their duties, for it was too often assumed by the local authorities that any man who was reasonably steady and bore an ordinarily good character, without possessing any special qualifications, would do to "inspect nuisances." He therefore proposed to lay before the meeting what he deemed to be the work of the sanitary inspector, and to inquire whether that work was done. The growth of public opinion and knowledge on sanitary subjects was well illustrated by the progress of legislation. As early as the tenth year of the reign of our present Queen, a Public Health Act was passed, which was renewed in the year 1848. The Nuisances Removal and Diseases Prevention Act of 1855 was, however, the basis of the present laws under which sanitary inspectors worked. In the same year the Metropolis Local Management Act became law. In this Act the water-closet is mentioned for the first time, it being provided that such shall be furnished with a suitable water supply and water-supply apparatus, &c. In 1866 the Acts were further amended, and the word "nuisance" is defined as comprising any house or parts of a house so overcrowded as to be dangerous or prejudicial to the health of the inmates; any factory, workshop, or workplace not included in any general Act for the purpose that is unclean or not ventilated in such a manner as to render harmless, as far as practicable, any gases, vapours, dust, or other impurities generated in the course of the work carried on therein, or so overcrowded as to prejudice the health of the inmates; also any fireplace or chimney that does not as far as practicable consume its own smoke. In this Act power was also given to disinfect houses, clothing, &c., showing another advance in sanitary legislation, recognising as it did the importance of isolation and disinfection for preventing the spread of contagious diseases. In the year 1875, sanction was given to an Act of Parliament by which the law relating to public health and local government was put into a simple and comprehensive form, although the metropolis is not affected by the provisions of the Act. The Local Government Board had since very clearly defined the duties of an inspector of nuisances, in a circular sent to the local boards in 1880; and an important provision was made in the Public Health Act of 1875 that the Government would pay half the salaries of the Medical Officer of Health and the Inspector of Nuisances, provided that the appointment and qualifications of the officers were approved of by them. It was satisfactory to note in this connexion that in the regulation as to tenure of office it was provided that should the sanitary authority suspend any officer, the cause of such suspension shall be reported to the Local Government Board, and that if the Local Government Board remove the suspension of such officer by the sanitary authority, he shall forthwith resume the performance of his duties. In the present day, sanitary inspectors had much more to do, and much more was required of them, than in times past. For instance, the abolition of cesspools and privies had rendered the construction of sewers a necessity, but serious danger arose from the presence in the sewers and drains of foul gas. Not that there was any necessity, in the nature of things, for the presence of sewer gas in sewers, for its formation could easily be prevented; indeed, its presence was indicative of something wrong in the construction or care of the sewers. The presence of sewer gas in the sewers and house-drains was sure to make itself felt in a greater or less degree in the houses of the vicinity, as it would find entrance thereto through imperfectly constructed water-closets, sinks, baths, lavatories, &c. When sickness was rife the sanitary inspector should be able to say whether it arose from the admission of sewer air through any such appliances. With regard to water, its storage in cisterns was to be condemned, especially where the overflow-pipe was taken direct into the drain or sewer. It did not reflect much credit on the government of this great metropolis that, owing to the vested interests of large companies, a supply of pure water was not available for every one at all times. We heard much of benevolence, and certainly Hugh Myddelton of old time shamed our modern philanthropists by his grand enterprise of bringing water to London by means of the New River. He (Mr. Jerram) had often wondered why some of our millionaires had not thought of the fame they would gain in this and future generations by undertaking to procure for our cities and towns a free supply of pure water. He read only the other day of a gentleman offering a million of money, at a small rate of interest, in order to promote tramways in Ireland so as to develope the resources of that unfortunate country. Was it, then, too much to ask that our rich philanthropists should come forward at this juncture and procure and supply to the inhabitants of the Metropolis that which the Almighty had provided in such abundance, but which, through the greed and avarice of man, was so difficult to obtain, viz., a constant and free supply of pure water? One of the most important parts of a sanitary inspector's work was the periodical inspection of every dwelling-house. It had been enacted in all the sanitary laws that there should be from time to time a periodical inspection of each district, and it was the duty of each inspector to make that inspection,—not to wait for complaints, but to search out and check any evils that might be injurious to health, because if they waited for complaints, little would be done, the mass of the inhabitants of the country not knowing the effects of those sanitary defects. But was this part of the sanitary inspector's duty always done? Were they not continually seeing in the papers

* We have already given particulars of the formation of this society. See *Builder*, vol. xliv., p. 829, and current volume, p. 163.

accounts of over-crowding and of fever dens? It was stated at the meeting of the Sanitary Institute at Glasgow last week that one gentleman had inspected 1,000 houses, in only three of which were the drainage arrangements perfect. The various sanitary insurance companies starting up in different parts of the country,—what were they but an evidence that the work of sanitary inspection was not being done as it ought to be done? No doubt it would be said that it was impossible to inspect every house in each district yearly, owing to the limited number of inspectors employed. There was, no doubt, some truth in that, as he found that in some districts one man had to inspect about 6,000 houses. He believed it would conduce much to the efficiency of the work of the inspectors in the London district if they were to make their reports direct to the sanitary authority, and not to the medical officer of health. That was done in places under the Public Health Act, and worked very satisfactorily. The sanitary inspector, according to the law, was an independent officer, and although he had to act in conjunction with the medical officer of health, he should be able to make his own report as to the sanitary condition of his district. Another reason why the work of the sanitary inspector was not done as it should be was owing to the restrictions put on the inspector by the sanitary authorities, who did not like to see the inspectors making themselves too active. The very constitution of a sanitary authority was often a bar to the work being efficiently done, as not unfrequently there were members who owned property, and who did not want to spend money on it. Very often the sanitary inspector got into trouble by wanting to do his duty conscientiously, and unless he was in a position to be independent he was not always able to point out defects as freely as could be desired. It might be thought by some that the law was not strong enough in all cases, but he was inclined to believe that the statutory definitions of the word "nuisance" were sufficiently elastic to meet all cases. It had been stated that another reason why sanitary inspection was not perfect was the incapability of the men employed, who were alleged to be deficient in the special knowledge required for the work. It could not be denied that in some cases that was so; but what special knowledge could be expected for 25s. per week, —less than the wages of an ordinary mechanic? No inducement, in the way of making his office permanent, was held out to the inspector to make himself efficient by attending lectures and reading books, and posting himself up in new discoveries in sanitary science. If such inducement were held out, better educated men would come forward to fill the office. It would, no doubt, tend to promote efficiency if no one could be appointed a sanitary inspector unless he held a certificate of competency, provided the examination were made a real test; but he for one could not believe that the answering of some half a dozen questions asked by members of a voluntary association was any test of a man's qualifications. He was, however, glad to see that the Lords of the Committee of Council on Education had consented to add the Science of Hygiene to the subjects in which aid will be afforded by the Science and Art Department. The list of subjects comprises much that should be known by a sanitary inspector. The office of sanitary inspector was a very delicate one, as he had to trespass on property and to break through the old adage that every Englishman's house is his castle. Courtesy and tact must be displayed by him if he would get his requirements carried out. It was not always a test of an officer's efficiency to look at the number of persons whom he has had to proceed against by summons. In conclusion, Mr. Jerram pointed out that the calling of the sanitary inspector was a noble one, though it was unobtrusive. Though they might not be known, and might not get medals for their work, yet the work itself was and would be its own reward.

In the discussion which followed,

Mr. Boulter (Bexley) expressed regret that Mr. Jerram, after making mention of Mr. Edwin Chadwick as one of the pioneers of modern sanitary science, had put in the second place the name of a gentleman who took up the promotion of sanitary reform a long time after a gentleman whom they all knew and respected,—the able editor of the *Builder*, Mr. George Godwin. Mr. Godwin years ago did most valuable service in exposing the condition of the London slums, one of the worst of which was hard by where they were then meeting. He (the speaker) knew those courts and alleys well, and was able to confirm everything that Mr. Godwin said of them in his paper. Happily, the matter was taken up, and an association, of which Lord Shaftesbury was chairman, was established for the purpose of remodelling and rendering decently habitable some of the wretched abodes which abounded in the locality.

The discussion was continued by Mr. Rees (Guildford), Mr. Byrne (Windsor), Mr. Buckworth (St. Saviour's, Southwark), Mr. Poulson (Tottenham), Mr. Sherborne (Chelsea), Mr. Fisher (Camberwell), Mr. Lewis (Port of London), and Mr. Stace (Limehouse). Nearly all the speakers laid great stress on the importance of their being placed in such a position as regarded tenure of office that they might be able to do their duty efficiently and fearlessly without running the risk of losing their appointments merely because they were efficient. Most of them pronounced in favour of the compulsory notification of infectious diseases, Mr. Lewis remarking that in Holland not only was it compulsory for cases of such diseases to be notified to the local officials, but the passers-by and neighbours were warned by there being affixed over the doors of the houses where such cases existed, boards inscribed "*In this house there is Small-pox*," or measles, or whatever the disease might be.

A vote of thanks having been tendered to the chairman for his address, it was announced that the next meeting of the Association would be held on November 3rd, at the Parkes Museum, when a paper on "The Position of the Sanitary Inspector" will be read by Mr. S. P. Skipworth, of Caistor.

SANITATION AT HOME AND IN THE EAST.

Sir Richard Temple, G.C.S.I., in his address as President of the Huddersfield Congress of the Social Science Association, said,—The area of this empire, at home and abroad, nearly eight millions of square miles, may fail to convey a definite idea; but the total of the population is instantly suggestive, as it amounts to 315,000,000 souls. This population, too, is increasing at the rate of 2,500,000 annually; in other words, by 25,000,000 every decade, or 50,000,000 in every twenty years. The total revenue amounts to 165,000,000*l.* sterling yearly, and the external commerce of the United Kingdom, with all its colonies or dependencies together, to nearly 1,000,000,000*l.* sterling in annual value. These facts show the empire to be the greatest and richest that the world has ever seen. It may also prove to be nearly the most numerously peopled empire as well; at all events, the number of its people is enormous. Out of that population, about 35,000,000, equal to one-tenth, are in the United Kingdom, and therefore fall directly under the influence of social science, as we, subject to correction, understand the term. The remainder are either colonies who, though giant offspring, may yet look to the mother country for some guiding example; or else alien though loyal races, whom the British Sovereign has taken under parental protection in three out of the four quarters of the globe. From our point of view, then, each one at home who succeeds in improving, or neglects to improve, himself, will influence, for progress or for stagnation, nine other persons his fellow-subjects abroad; every result which we realise in the United Kingdom may be ultimately multiplied nine times in the foreign empire; and if we were to be nationally listless or inefficient here, then a similar listlessness and inefficiency would settle there among vast nationalities in scattered regions. Surely this consideration will help us to gauge the weight of our responsibilities under Providence, the grandeur of our opportunities on behalf of ourselves, as forming a mighty nation, and for the sake of other nations also that are politically connected with us. Besides those colonies that are of our own flesh and blood, and for whom we feel as for ourselves, there are the almost countless tribes among whom the poorest, the most abject, has a bodily frame to be sustained, a mind to be enlightened, and a spirit to be moved. Thus regarded, the sphere of our study is indefinitely widened, and the magnitude of its scope becomes enlarged to an extent almost indescribable. The aim of our study (by whatsoever name it should be called) is to render mankind not only prosperous materially, but also happy and wise, as individuals and as members of an organised community. Though we may have faith that there is a light that can irradiate even the darkest prison-house, still for the most part we know that happiness and wisdom cannot be attained without a reasonable degree of physical comfort. It is practically vain to inculcate morality upon those who are huddled together in squalid tenements. It is impossible to obtain proficiency from half-famished scholars whose brain-power is enfeebled by hunger. The standard of physical comfort, then, has always been kept before the student's mind, and may constitute the primary division of my address. Herein the foremost topic has been the improvement of dwellings. For this object something is being attempted at home, though we are saddened by the thought of how much remains to be done. Now, in India or in Egypt the self-same need presents itself to philanthropists. Amidst the villages the peasants pen up the cattle inside the dwelling-houses. Amidst the largest cities the artisans are crowded together in the compartments of houses many stories high, wherein, to all the miseries which exist in these cool latitudes, there are added the heat and malaria of the tropics. The dwellings of the poorest close to the centres of civilisation, both in the East and the West, often exemplify terribly the Eastern proverb, that the darkness is deepest right underneath the candle. In the colonies, again, we hear that while the settler dwells in the comparative discomfort of draughty huts, with chinks that admit the outer air, he remains healthy. But when the squatter population begins to congregate into villages, and cottages of another sort are built, then typhus and zymotic disease appear. Again, the quality of food-supply is a matter with which our studies are rightly concerned at home, and this object is almost, though not equally, important abroad. Respecting adulteration of food, there is not the same temptation in the thinly-peopled and abundantly productive colonies as in a densely peopled island like Great Britain. In the East the natives have not yet acquired much proficiency in that dark science, though they might prove but too teachable if once this black art were to gain ground at home. For instance, on one occasion when a malignant disease broke out in the port of Calcutta, the native contractor for the supply of water to the shipping was found to have adulterated the pure liquid from the waterworks with some impure fluid from the river! Still, irrespective of what may be termed artificial evil, imagine the natural evil to which articles of food or drink are liable in the tropics,—such as the exposure of meat in the burning heat of an Oriental city, or the fish in coast districts where fish is extensively cured, and where the curing is but too often imperfect. If the pure and wholesome quality of food for the masses of humanity congregated in the British metropolis is a theme for study, equally must this be the case for a city like Bombay, where 700,000 people are compressed into a little island situated at some distance from the main sources of sustenance. Again, the subtle conveyance of poison through the medium of milk causes solicitude here. But the danger is even more active and urgent in the East, where, from the habits of the milkmen, the milk is but too frequently affected by poisonous ingredients. If time permitted I could give signal instances of valuable lives being lost from milk-poisoning, not by any evil design, but simply through reckless ignorance. The purification of water for drinking and for bathing has always been among the objects of our studies, and some benefit has accrued from persistent advocacy. There is dread lest impurity in this element should produce untold evils in the United Kingdom; but we know that in India it has produced more physical mischief than any cause whatsoever, and perhaps as much mischief as all other causes put together could produce. In the capital cities, the Indian Government and people in combination have constructed waterworks very much after the scientific models established in the United Kingdom, in every instance with a marked benefit to the public health. In the lesser towns of the interior waterworks have been or are being built; in every case some local diseases, ignorantly believed to be unavoidably endemic to the locality, disappear as if by magic. Still, among the villages of vast territories, some have water from running streams and others have not. Those which are thus destitute add to the natural difficulty by recklessly defiling what little water they have. Time does not admit of my adducing instances

of the epidemics traceable to the state of the water when the scanty tanks and wells have been reduced to their dregs. We see at home illustrations of wells being poisoned from sewage. I remember a case where a large garrison of European troops was decimated and disorganised by cholera, which, after inquiry, was attributed to percolations from cesspools through the solid ground into the drinking-wells. In times of famine, mortality has occurred not only from the withering of crops, but also from the drying-up of the drinking-water. The State might convey food for famishing multitudes, but could not bring water for thirsty millions. Much of this evil is preventible by water-supply provided during years of plenty, and here is a field abroad for that engineering science which has wrought wonders at home. It were almost superfluous to call to remembrance the successful efforts put forth at home respecting sanitation, drainage, and sewage. We have but lately beheld the terrible example afforded by the cholera in Egypt. If this fell foe be generated somewhere else than in the localities actually attacked, and be, as it were, floating in the air, still its attack is generally, though not invariably, attracted by insanitation or averted by sanitation. The Angel of Death is, so to speak, hovering over a doomed land, and he descends on those spots which are the foulest. We can imagine what the physical surroundings of the Egyptians in the cholera-stricken places must have been, from our knowledge of the like conditions in other countries of the East. In India the capital cities have drainage works constructed in the manner which has approved itself to engineers at home, whereon some millions sterling have from first to last been expended, to the marked diminution (among other things),—indeed, almost to the prevention, of epidemic cholera, — though sporadic cholera still appears sometimes. Drainage works are also undertaken in all the lesser towns of the interior. But the faults of sanitation, still remaining in the great cities and the lesser towns, are legion; while the conduct of the rural people in most of the villages in the matter of sewage is so culpably fatuous as to be incredible to any save those who have witnessed it. Some attempt is made to diffuse a smattering of sanitary science among the rustics, but it is uphill work to reclaim a population from the habits of centuries. If anything could aggravate the regret with which this disposition of the people must be regarded, it would be the thought that the utilisation of sewage, even in the smallest quantities, is peculiarly needed for Indian agriculture, which ordinarily is very deficient in manure. Though much is attempted in this matter at some central places, yet in the country generally quantities of sewage, which might have fertilised the fields, are left to breed poison for man. As the proportion of the urban population to the whole people increases, and as the congregation of inhabitants into dense masses proceeds apace, there is no profession more vitally important than that of sanitary engineering. This profession at home has attained a considerable growth, and will thus afford the means of forming similar professions abroad. But even yet the faults in domestic as well as in public sanitation here are sometimes appalling, and cause new evils even worse than that which the arrangement was intended to obviate. How much more must this be the case abroad,—in the rising colonies, where towns spring up with startling rapidity before proper arrangements can be made; in the East, where the work has to be done through native agency under novel conditions that breed mischief with perplexing effect. Already in the East the fear that sanitation, while averting some familiar diseases, is actually producing typhoid sickness, gives rise to a prejudice among the natives against Western sanitation. Nothing but a more rigid attention to sanitary engineering can set this right. So frequent are the sanitary faults in new-built houses in urban localities at home that some authorities recommend the professional inspection of every new house before it is occupied, and private companies are formed for this purpose. This must be equally wanted in the colonies, and assuredly it is needed in the capital cities of the East. The preparation of those vital statistics which are essential to good administration is, doubtless, accomplished well in the United Kingdom, perhaps in the colonies also; and the difference in the death-rate between town and country tells a terrible tale of the physical ills which humanity brings on itself by the conditions of social existence. In the East, however, this work has hardly advanced beyond its infancy. It is, indeed, hard to ascertain the facts of births, of disease and death, for so vast a population; and as yet they are but partially ascertained, though progress towards ascertainment is being gradually made. For the principal centres, and for some selected districts in the interior, the facts are known, and they reveal death-rates that are always higher than those of Europe, and are sometimes miserably high. Hospital management at home is a subject to which the attention of this association has been constantly directed, and at its instance a conference of hospital authorities has assembled, whose deliberations will, doubtless, prove fruitful in results. This subject is of at least equal importance in the East, where the founding of hospitals and the opening of provident and charitable dispensaries are regarded by Asiatics as among the fairest features of British rule. If at home errors in management arise, and peculiar diseases are generated within the very walls of these institutions, how much more must this be the case in the East, where to inherent difficulties are superadded the tropical conditions and the habits of an Oriental people? In all matters relating to the public health, the Eastern nationalities must be brought under sanitary education. Unless they learn how to save themselves and become imbued with a desire to practise what they learn, the utmost effort of the State for saving them will fail. Therefore, sanitation must form a prominent branch in the national instruction, sanitary primers must be used in the schools, sanitary regulations elaborated by the native municipalities, and sanitary treatises circulated, so practical that he who runs may understand them.

ART EDUCATION AND ITS APPLICATION TO TRADE.

This was the subject of the address given by Sir Rupert Kettle as President of the Art Department of the Social Science Congress at Huddersfield. He observed that though the subject of art-education had been under discussion for the last fifty years, we had not arrived at a consensus of opinion as to the best mode of establishing a national system of education in pure and applied art. While he did not think the system practised was the best that might be pursued, the nation had had, was having, and would continue to have, full value in return for its outlay. Fifty years ago we spent more money in purchasing works of art and art works than any other nation, and at that time the popular taste was only just beginning to rise from its very lowest level. The enormous increase of national wealth which followed the introduction of the steam-engine produced great changes in the state of the arts, for as men grew rich they surrounded themselves, as their predecessors in estate had done, with works of art and art work. Though some of the achievements of our native artists ranked among the finest productions of any age or country, the works of foreigners were preferred. As the supply of genuine objects was exhausted, the trade of imposition set in. This, even, would not have aroused public opinion in favour of art-education had not we been dependent, in those manufacturing trades in which the element of taste entered, upon foreign designers for patterns. In the course of time foreigners sent us the manufactured articles instead of the patterns, and it was not a year too soon when, in 1835, Parliament tried to extend the knowledge of the arts and principles of design among the people, and especially the manufacturing population of the country. It was, however, to the great Exhibition of 1851 that we must look for the beginning of our present comprehensive and, in the main, successful system of art-training. In giving a view of our national art-education as now carried out, Sir Rupert said that as part of our ordinary system of elementary education in voluntary and Board schools we had each year 600,000 young persons of both sexes under instruction in drawing. Last year we had in operation 169 schools of art, with 13 branch schools and 545 art classes,—some affiliated with the schools, but the greater number working independently. To this number must be added at least 200,000 pupils each year under more or less advanced art-education. The direct payment out of public funds was 53,441*l.* and 39*l.* 19s., or less than half-a-crown per annum per pupil. Of course, these payments were supplemented by private contributions and school fees. The end of the elementary part of art-education was imitation, without invention and without imagination,—the foundation upon which all true art-training must be based. In considering the advantages gained by our national art-teaching, apart from their value as a preparation for special study, Sir Rupert said that free-hand drawing is itself an art, although not of that class called a fine art. It is an art in the sense of skill. Besides, it is the rudiment of pictorial art, and to a certain extent, of plastic art also,—the two important branches of the fine arts. Free-hand drawing has the advantage that it is useful in itself. It is a language by which art is expressed. It can tell you form, for useful as well as for ornamental purposes. Practically, it is a new faculty of language. When we consider that we are every year giving this faculty in a greater or less extent to upwards of half a million of our working classes, we may realise the magnitude of the benefit we are,—apart from fine-art culture,—conferring upon the whole community by our drawing-schools. This benefit is of itself, I venture to assert, worth all the money which is being expended upon it. The statistical return showing more failures than we might expect in the higher departments of study does not affect the result of our substantial success in teaching free-hand drawing. Referring to the educational use of our museums and galleries, he said it was obvious that general art culture is a direct mode of creating a pure public taste; for by its operation the trained weaver would know artistic metal when he saw it, and the potter who had learned to love his beautiful vases and plaques would see when a chair was graceful or a wall appropriate. But outside those directly interested in production there was a great public to be taught to appreciate art so as to be able to select the beautiful and reject the ugly. Beauty is not a mere subjective but an objective fact, though it is indefinable by verbal description, and a critical knowledge of art can only be taught by example. The South Kensington Museum had grown beyond the reach of satire. The value of its treasures was such that if sold at Christie's it would realise more than double their cost. The various bequests to it also showed approval of it by not only competent but eminent judges of art. Without a vigorous effort, and the force of genuine examples constantly presented for examination and study, it would have been impossible successfully to have combatted that vicious taste which for so many years had grown up under the circumstances already referred to. If the Museum has done nothing else, it has certainly created a sounder knowledge and fostered a better taste amongst our wealthy middle class. It is, however, in connexion with South Kensington that its educational influence is most directly felt. There is not a designer in any branch of trade who has mastered the principles of free-hand drawing but could find in the Museum an exemplar to guide him in his work. The system of circulating objects of art had now become one of the most important features of the scheme for disseminating art taste, as well as the establishment of art galleries in the large provincial centres. Having shown that enough was being done to educate the public taste, he reverted to the question of art instruction. The pupil having finished the practice of imitation he should be fit to commence study in imaginative or inventive art. The highest object of such study was pure art,—the production of works intrinsically beautiful or beautiful by association, apart from any special purpose they are to serve or use to which they might be applied. Without raising the vexed question of whether State aid is the best means of developing a pure art feeling, he was of opinion that our Government college could not give the best training to the few naturally endowed artists. The system of the South Kensington institution was more adapted to applied than to pure art,—to the decorative or the industrial arts. If pure art be the aim, the young artist should either become pupil to some master of a particular style, or enter the Royal Academy, to which access was not difficult, or avail himself of one of the institutions founded by the liberality of Felix Slade. An idea might be gained of the educational work at Burlington House from the fact that there were now 413 students on the books,—22 sculptors, 176 architects, and 215

painters,—while the Academy spent of its own money nearly 7,000*l.* a year upon its schools. South Kensington should draw a more distinct line between pure and applied art as far as was convenient in practice, and always in thought. Proceeding, he said: It is a common complaint amongst masters of schools of art, as I believe it is at the central establishment, that almost all artisan pupils desire to become painters, though they might, and many ought to be, employed in applying the learning they have already gained to the trade to which they have been perhaps apprenticed, and in which they work daily. A few of the artisan scholars persevere in imitative art until they can paint pictures of what is called still life,—of fruit, flowers, or even familiar, unsuggestive, and therefore inartistic landscapes. Some of these can be sold, and after a short time they gain a larger income than their late workfellows receive as wages. This tempts others to try to follow their example, and many a good art-workman is lost, without being replaced by an artist. Our local schools of art receive annually large contributions from the wealthy inhabitants and those engaged in the trade of the districts where they are established. A part of this fund might, without injuring the general work of the school, be usefully devoted to forming special classes in which artisans who had mastered the elements of art knowledge, and acquired the necessary skill in execution, could be taught the practical application of their knowledge to the trade in which they are engaged. The principles of applied art can be taught by direct instruction, and can be best accomplished by dividing the subjects into classes, such as—(1) Pictorial, (2) Plastic, and (3) Textile. These can be sub-divided according to their uses, and each taught with regard to its special requirements for practical application. Art objects are either decorative or decorated. Decorative objects should be intrinsically ornamental, self-contained, and complete, not dependent upon extraneous aid for their effect, but beautiful in their own form, colour, and sentiment; and beauty must be considered apart from utility. Decoration is something applied; the object to be decorated is the first consideration, and to it the decoration must be subordinate. Use is of primary importance, and decoration should be incorporated with, and become part of, the thing decorated, without altering its structure. The main difficulty is to teach pupils to devise or invent appropriate ornament. The range is limited within which natural forms and colours can be decoratively used. Ornament is too apt to preside over that which it is intended only to improve. Pictorial decorations are apt to break up flat surfaces; they clash with the colour of material, or they interrupt the flow of structural outlines. Natural objects, beautiful in themselves, are what is called conventionalised for decoration. The best examples handed down to us from the greatest masters of decorative art in all ages show that they all used their skill in conventionalising in their finest works. Students may copy work and examine it until they catch its spirit and purpose; but if they want to profit by it as an example, they must go back to nature, and not attempt to conventionalise that which is already conventional, as our designers are too apt to do. It is in teaching the designer to conventionalise natural forms that the trained eye of the master will teach the student to seize the principal quality of form (if he is designing form) which excites admiration of the natural object, then to subdue that form to his purpose by modifying it into conformity with that with which it is to be associated. Let the schoolmaster instruct and advise, but let the pupil work out his own thoughts upon design on the material he is most accustomed to, and complete his art-education in the workshop. The institution founded by the great chartered companies of the City of London seem admirably suited to carry on this work. They have shown a good example of what appears to me to be required in connexion with our national teaching. My conviction, founded upon long experience, is that in the thirty years since 1851 we have made most satisfactory progress in all those staple industries which require taste and art knowledge for their success. We are producing not only the best decorative ceramic ornaments, but the most beautifully decorated and useful pottery in the world. Our metal-work, from cathedral screens to domestic brasses, is a manufacture of which we may be proud. No country has at any time produced such pure brilliant flint glass as the English makers now give to the world. As to design, whether in cut, engraved, or carved glass,—whether in rock crystal or cameo work,—no such art glass was ever before seen as that which is now being produced in the Potteries. Of textile fabrics I hope to learn while in Huddersfield that your fancy woollen goods are showing as high a taste as the lace curtains which Nottingham is now making. Speaking of pure art, the work of English artists has wonderfully improved in drawing and careful attention to accuracy of detail, and this has been effected without impairing the boldness and perfect freedom of touch characteristic of the best masters of the English school. I attribute this improvement in the academic training of our artists to the fact that so many of our best painters have been pupils at Burlington House. The progress in refinement and purity of taste amongst the general public during the last forty years has not been so satisfactory as the improvement amongst the professors of the different branches of art. The impediments to progress in the former case have been greater, more obstinate, and more difficult to assail. When the attack upon vicious taste began, King Sham and his kinsman Rococo had long been in possession of the field, and vested interests die hard. Even down to our own day the forces opposed to good taste have considerable vitality, and, by accidental accretion, occasionally form themselves into something like organisation. They erect a barricade of fashion, and defend themselves behind it. At one time it is the reconventionalised hyper-conventionalism of the Japanese that is brought into fashion. At another time, work in genuine old Dutch taste, corrupted, is called "Queen Anne." The revived taste for church ornaments is pushed into ecclesiasticism. By the hold which historical association always has upon English sympathies, the taste of the middle ages is inflated into Mediævalism. And now a weedy variety of conceit run to seed is called æstheticism. True taste will not always yield to the breeze,—literally the puff,—of fashion. By vigorously pursuing the course upon which we have entered, and closely attending to directness of aim and object, we shall in time found upon a true standard of beauty and fitness a distinctly national and pure style of decorative art.

RULES OF PROCEDURE IN PUBLIC COMPETITIONS IN ARCHITECTURE AND ENGINEERING ABROAD.

The Congress of German Architects and Engineers, which recently met at Frankfort, deliberated, amongst other things, upon a scheme of rules, submitted by a special committee, for the management of public competitions in the departments of architecture and engineering. The result of the discussion was the approval of the following system of regulations which are recommended for the adoption of the professions throughout the German Empire.

1. The majority of the judges who have to adjudicate on the competitive drawings or designs must in every case consist of experts,—that is, professional architects or engineers.

2. The names of the judges must be stated in the programme of the competition. They must have approved of the programme before its publication, and declared their acceptance of the office of judges.

3. The acceptance of the office of judge presupposes that the acceptor has renounced the right to enter directly or indirectly into the competition, and gives up the right to take any part in carrying out the building or structure concerned.

4. The drawings and calculations demanded in the programme are, as a rule, not to exceed the measurement requisite as a rule for sketches that are carried out, and for a summary calculation of the cost on the basis of the mètre, the square mètre, and the cubic mètre as the units of measure as regards length, superficies, and cubic contents respectively.

The scale of measurement must always be prescribed with exactitude.

The representation of details is only to be demanded when they are of particular importance in regard to the general idea of the design.

5. It must be clearly stated in the programme whether essential importance is attached to the condition that a certain defined sum is not to be exceeded in carrying out the work, and whether all plans exceeding such sum are to be excluded from the competition, or whether the said sum is only intended to serve as an approximation, in which case greater liberty is to be understood as expressly conceded to the competitors.

6. A design is excluded from the award of prizes under the following circumstances:—

(*a.*) When it is not sent in within the prescribed time.

(*b.*) When it violates an essential condition of the programme.

Clumsily-executed drawings and designs which have blundered in the fundamental idea may be excluded from the competition. The reasons for the exclusion of any design must be stated.

Of the drawings received the judges are to exclude from adjudication and exhibition those portions of any project which exceed the scale of measurement prescribed.

7. So far as there are designs admissible to the competition, the prizes offered must be awarded to those which are relatively the best. Only in case the judges are unanimously of opinion that no performance is deserving of the first prize is it permissible to apply the sum offered as prizes in a different manner, as, for instance, in rewarding the more meritorious designs.

8. All performances admitted to the adjudication are to be publicly exhibited for at least two weeks. The award of the judges, with the reasons for it, must be publicly announced.

9. The designs to which the prizes have been awarded are only the property of the giver of the prizes to this extent, that he has the use of them for the purpose of carrying out the building. The right of publishing designs or employing them for other purposes is reserved to the author.

10. The prize, or, if several prizes are offered, the total sum they amount to, must be equal at least to double the honorarium laid down under the head of "Designs" by the Hamburg rules.

In case there are several prizes the first must be at least equal to the amount of the before-mentioned honorarium.

The following is another translation of the foregoing rules for the mode of procedure in public architectural competitions in Germany. The proposals of the Hamburg Society were accompanied by explanatory remarks indicating the motives which led to the drawing up of each section of the proposed normal regulations. These are quoted in each case, and will no doubt be read with much interest by British architects:—

1. Amongst the judges of the competition, professional men (technical authorities in building matters) must be represented in a preponderating manner.

[Non-professional persons seldom possess the faculty of looking at architectural plans in their entirety, of accurately recognising faults, defects, and preferable features, of considering their relative value, and of judging what the effect of a design will be when carried out. The capacity of judging such questions is only given by professional knowledge of a high degree of merit, and by many years of experience. Therefore, the majority of the judges should be professional men of acknowledged reputation. The presence of non-professional men (members of administrative bodies or of the building committee, &c.) is desirable in order that local interests may be adequately represented].

2. The judges are to be named in the programme, which they must have approved before its publication, having also declared their willingness to undertake the judicial functions in question.

[The principles and general ideas of the judges as to style, monumental and technical execution, allow of the nature of the decision being foreseen in many cases. The agreement of the judges with the programme is only made generally evident by their signatures.]

3. The acceptance of the judicial office involves abstention from all direct and indirect competition, and from participation in the erection of the building in question.

4. The drawings and calculations asked for in the programme are not, as a rule, to exceed such steps as are necessary to arrive at the cost according to the sketches executed, and a summary estimate, based on unities of measure, such as mètre of length, square mètre of surface, cubic mètre of capacity, &c.

[There is usually too much required from the competitors in the programme, which often prescribes quite unnecessary work. Complete building drawings are frequently asked for, with specified

instead of general estimate. Detailed drawings are often asked for, of a description which are quite superfluous before the general design of a building has been fixed. Representations of details should only be demanded where they are of special importance in the conception of the design. Moreover, within the prescribed measurements there should be complete freedom in the representation.]

5. The programme is to state distinctly whether leading importance will be given to the observance of a certain limit of cost, so that all plans exceeding that limit would be rejected; or whether the limit of cost referred to is to serve as an approximate basis, in which case a more extended scope is expressly reserved to the competitors.

[Many competitions have been void of result, because this point has not been previously raised in a sufficiently exact manner, and also because the programme required more than could be furnished for the specified amount; the latter circumstance alluring the competitors either to incorrect estimates, or to an impoverished execution of their designs. The judges are thereby placed in the regrettable dilemma of choosing between a meagre but honourable project, and a rich design carried out on an imposing scale, with estimates knowingly falsified. It is, therefore, necessary for it to be exactly stated in the programme where the chief point of the competition lies; whether in not exceeding the sum named for the building, or in the complete and artistic carrying out of the programme.]

6. The exclusion of a design from the competition takes places:—

(*a.*) When it is not delivered in time.

(*b.*) When it is essentially in opposition to the programme.

Designs which are seen to be faulty in their fundamental ideas can also be excluded. The exclusion is to be founded. Such projects as exceed the measurements required are to be excluded from consideration and from exhibition.

7. Provided that there are works capable of competing, the prizes offered are to be awarded to the relatively best designs. Only, in case the judges are unanimously of opinion that none of the designs are worthy of the first prize, it is allowable for the total amounts offered in prizes to be employed in a different form of division for the purpose of distinguishing those designs most worthy of notice.

8. All the works accepted for competition are to be publicly exposed during two weeks, at least, as a rule, after the decision of the judges has been made. The duly founded opinion of the judges is to be published.

[By exhibition of the designs, the public acquires a greater interest in the work in contemplation, while the competitor has an opportunity of making his work accessible to the public, and of seeing the productions of his rivals. On account of the diligence which each competitor has employed on his work, he has a right to claim a thorough examination of his design, and acquires the right, in case he receives no prize, of asking the reasons why the judges have preferred other designs to his.]

9. The designs which receive prizes are the property of the person organising the competition, or of the proprietor of the work, only so far as they are used in the execution of the work in question. The right of publication, as well as of employing the designs in other ways, remains with their authors.

10. The prizes (or where several prizes are concerned, the total of them) must at least represent the double of the *honorarium* fixed by the Hamburg rules of September, 1868, as to designs. When several prizes are given, the first prize must at least represent that amount.

[The preceding regulation is founded upon the fact, that in a competition, a number of architects or engineers are engaged in working out the same problem. The owner of the work has, therefore, a number of designs for comparison and selection, and has thus derived from the competition greater advantages than he would have had if only one person had made a design.]

BRISTOL AND CLIFTON JUNIOR ARCHITECTS' SOCIETY.

A MEETING of the Bristol and Clifton Junior Architects' Society was held the other evening at the School of Art, Clifton, under the presidency of Mr. G. E. Ford (the hon. treasurer). There was a large attendance. Mr. W. E. Hill, the hon. secretary of the Society, in opening the meeting, said it was necessary to explain why such a length of time had elapsed since their last meeting was held. This delay had been unavoidable. They would remember that in July of last year the question was raised of again starting the old Society of Architects. The Council of the Junior Society, recognising the importance of such a proposal, and the advantages which would accrue to the members from such resuscitation, allowed the programme of the Junior Society to subside in order that no apparent opposition should be made, and so that they might, without prejudice to their own society, give every support to the new scheme. Having allowed sixteen months to elapse without any appearance of the new society in black and white, the Council now considered themselves entitled to take up their own scheme again, and endeavour to make the Junior Society a permanent and valuable addition to the profession, looking forward to the time when the question of a senior society of architects should be again and successfully started, when they would be prepared to render every support to the scheme. During the year their meetings had been few in number, although the ranks of the society were steadily increasing. After referring in detail to the past and future of the society, Mr. Hill said that as the questions then to be considered were of such lasting importance, he would seize the present opportunity of asking them to elect a successor to him in the post of hon. secretary. He might say that the post of hon. secretary had always placed him in the most pleasant relations with his fellow students, but during the past year the work of the society had so increased that he felt it impossible to continue it successfully. As the originator of the society, he wished it a long and prosperous career.

Mr. Hill's resignation was received with general sorrow; and on his declining to reconsider the matter, a vote of regret was passed.

Mr. White proposed, and Mr. Howell seconded, a vote of thanks to Mr. Hill for his valuable services.

Mr. G. E. Ford was then elected hon. secretary, and Mr. W. E. Hill was elected to a seat on the Council.

After a prize competition scheme and other business had been settled, votes of thanks to Mr. J. Nicol Smith and to the Chairman terminated the meeting.

YORK ARCHITECTURAL ASSOCIATION.

AT the closing meeting of the present session, in the absence of the president (Mr. W. G. Penty), Mr. Wm. Hepper presided. The principal business transacted was the election of officers to serve on the executive for the coming session. Mr. N. R. Yeomans, in proposing the re-election of Mr. Penty as president, commented on the very creditable and generous manner in which Mr. Penty had discharged the function of president, and the keen interest he took in the Association's success and welfare. Mr. Braithwaite seconded the resolution, which was carried unanimously. The following gentlemen were re-elected:—Mr. Wm. Brown and Mr. A. Pollard, vice-presidents; Mr. B. Priestley Shires, honorary secretary; Mr. Wm. Hepper, treasurer; and Messrs. Braithwaite, Yeomans, Crummack, Smithson, and Smith, were balloted for and elected ordinary members of the committee. Cordial votes of thanks were passed to all the above gentlemen for the services they had rendered to the society during the past session. Mr. Shires announced that the following gentlemen had been successful in the competition for prizes offered by and through the Association:—

Elementary Class of Design.—1st prize, Mr. J. E. Jefferson; 2nd, Mr. G. H. Nelson.

Advanced Class of Design.—1st, Mr. Frank Raney, Darlington; 2nd, not awarded.

For the best Set of five Sketches of Ancient Buildings.—Mr. J. E. Jefferson.

Mr. Shires expressed regret at the lack of interest on the part of the younger members of the society in coming forward and competing for the prizes offered, but trusted that they would lay hold of the advantages which were so kindly offered to them, and which would no doubt better fit them for their professional career.

THE CORNELIUS SALOON AT THE BERLIN NATIONAL GALLERY.

THE recent centenary of the birth of the painter Cornelius was marked by the re-opening in a completely altered form of decoration, of the first Cornelius Saloon at the Berlin National Gallery. The cartoons have (according to the opinion of experts) long suffered from the cold, dull, grey tone of the walls, and to this circumstance has been attributed the absence of the effect which the artistic and general public had looked forward to when the collection was first organised. The grey colour of the walls has now disappeared, having been replaced by a warm reddish-brown tone, on which is an elegant and quiet arabesque pattern in black. This design is the same which Cornelius designed for the saloon in the Casa Bartholdy at Rome, in which he, Overbeck, Veit, and Schadow executed the cycle of frescos representing the history of Joseph, considered to have been the first monumental work of the modern German school of art. The basement panels have been painted a wood-brown shade, and bronze barriers have been erected in front of the cartoons, to prevent the too-near approach of the public. The frames of the pictures are now of a more cheerful colour than before, and various other ornamental details of the saloon in question have been modified in such a manner as to heighten the general effect. Comfortable round seats have been added, and growing plants have also been placed in convenient positions. It is intended to treat the second Cornelius Saloon in a like manner, in time for the centenary festival, which is to take place late in October.

THE PROPOSED COMPLETION OF MILAN CATHEDRAL.

THE plan of giving the cathedral of Milan a suitable west façade, and thus fully completing the work, has again been attracting attention in that city. The *Munich Allegemeine Zeitung* states that the competing plans of two Milan architects have been on exhibition at the Brera Palace,—those of Professor Cav. Beltrami and Professor Carlo Ferrario. The designs of the former are described as being simple and unpretentious, their execution not being attended with much expense. Those of the latter are richer and more striking, his object being to heighten the effect of the somewhat monotonous front, and to make the needful structural alterations in connexion with the bell-tower which is in contemplation.

The journal referred to considers that the design of Professor Ferrario hardly meets the artistic requirements of the proposed work, and suggests that there should be a competition (either limited or open) in which the architects of Germany, France, England, Austria, and Italy would have an opportunity of solving the problem of completing the work in such a way as to carry out the ideas which might justly be supposed to have been those of the original architect. The decision would rest in the hands of an international committee, and the present appropriateness of the scheme is commented upon in connexion with the quincentenary in 1886 of the foundations being laid of the cathedral itself.

THE ART FOR SCHOOLS ASSOCIATION.

THE Rev. Brooke Lambert gave a *resumé* of the work of this society to the Art Department of the Social Science Congress at Huddersfield. He said it proposed:—Firstly, to provide art subjects; to purchase some; reproduce in cheap form others; and generally to aid in procuring and distributing objects of art suited for schools. Secondly, to make an exhibition in which these should be collected, priced so that managers might see what they had the opportunity of getting. Thirdly, to give lessons on the objects in schools, lectures on pictures in galleries, and otherwise to convey oral teaching on art subjects. After mentioning what had been done, and referring to a similar project under consideration by the French Government, the writer discussed:—First, the question as to whether the collections should be, as a rule, purchased by school managers, or sent to them on loan. His opinion was, for many reasons, in favour of the latter course. He next referred to the nature of the objects,—pleading, first, for objects large enough to be easily seen; secondly, for coloured pictures; thirdly, for pictures suggesting action; fourthly, for pictures of natural objects. He concluded by recommending the scheme as an outlet for voluntary effort, and mentioned a similar project in process of realisation, by Mr. T. C. Horsfall, at Manchester.

Mr. Wallis (Nottingham) said he thought that in schools simple objects should be placed so that children's minds might be trained thereby.

Mr. Rathbone considered that art was not merely a luxury, and that children should be helped to acquire definite ideas by means of pictures and models.

The Rev. John F. Richards (Master of the Collegiate School, Huddersfield) said it would be well if there were some kind of depôt where schoolmasters and teachers could obtain pictures and models by which they would be enabled to illustrate the subjects they taught.

The Chairman deemed it highly necessary that pictures should be coloured so as to represent nature as near as possible.

Mr. David Johnstone (Huddersfield) explained that students who entered the classes of the Huddersfield Technical School were required to have some previous knowledge of drawing.

Improvements at Ventnor.—It has been decided by the Local Board to build a pier, at a cost of 20,000*l.*

TIMBER HOUSES AT HILDESHEIM.

The most beautiful domestic buildings of the Middle Ages are undoubtedly the timber-constructed houses. We mean those erected entirely of wood, and do not include half-timber or post-and-pan structures (where the "pan" or panel is filled in with lath and plaster, brickwork, or rubble). Of these purely timber buildings the remains are, of course, far more limited than those of post and pan or half-timber ones. Fortunately, however, the highly interesting old city of Hildesheim, in Hanover, still abounds with splendid examples of houses erected entirely of timber, and carved from floor to gable. Several of these we have previously illustrated, and we now add to our former examples two more. To show how highly advisable it is that these timber houses should be drawn and illustrated, we may mention the fact that out of three examples which we have formerly published, one alone now remains, both of the others having been burned down to the ground very shortly after we published our illustrations. The same fate also befell the beautiful examples of "post and pan" houses at Boppard which we published at the same time. Of course, houses constructed entirely of timber are especially liable to destruction by fire. A defective flue, the upsetting of a spirit-lamp, and a hundred other accidents, may set fire to one of these old buildings, and it is simply impossible to extinguish the flames until the whole street or district is burned down. These buildings are well worthy of study because they are most complete and magnificent examples of ornamentation, and if, as is far from impossible, means might be discovered of rendering this kind of construction free from the danger of destruction by fire, nothing could be conceived more appropriate as well as beautiful for domestic buildings.

COVERING TO CENTRAL AREA OF THE ROYAL EXCHANGE.

This has been contemplated for many years as being almost a necessity for the comfort of the merchants and others who have daily business here, and are exposed to wind, rain, and snow. Several plans have been from time to time proposed, but hitherto none have been thought sufficiently satisfactory to attain the double object of protecting the area from the weather by a roof, and having that roof so designed with glass and light iron ribs, as not materially to interfere with the window-lights which surround the open court and light offices, of great importance and large annual value.

The Royal Exchange is under the management of a body called the Gresham Committee, which is composed half of members of the Grocers' Company, to which Sir Thomas Gresham, the founder of the Royal Exchange, belonged, and half of members of the Corporation.

This committee, moved by the repeated and earnest request of the London merchants to cause the Exchange area to be covered in without further delay, agreed last year to have a limited competition of architects for designs for doing so, and invited the following gentlemen accordingly to send in designs under a series of instructions, a copy of which was sent to each:—Mr. George Aitchison, Mr. E. A. Grüning, Mr. Edward I'Anson, Mr. C. E. Powell, Mr. Fredk. Sang, Mr. Henry Stock, Mr. John Whichcord, and Mr. Barry.

Since these instructions were not without objection in several particulars, a meeting was at once arranged between the architects applied to, and at their request Mr. Barry was deputed to ask a meeting with the Gresham Committee, and beg their reconsideration of the instructions, and especially as regarded the following points:—

1. That professional advice should be taken by the committee in making a selection from designs sent in.

2. That the committee should pledge themselves to employ as architect for the work the gentleman whose design should be adjudged the best.

3. That the sum named of 8,000*l.* as cost of the work be increased to 10,000*l.*

4. That instead of the premium offered to the first and second best amounting together to 600*l.*, that sum should be equally divided among all the architects who were invited to compete, as some recompense for their time and trouble in making their designs.

The Gresham Committee most courteously took the above into consideration at a special meeting. As regards No. 1, they informed the competitors that in making their selection they would take the advice of the architect to the Grocers' Company, who was not a competitor. They assented to items 2, 3, and 4, as placed before them by the competitors, and issued amended instructions in the above sense, and with some other minor improvements.

Under these circumstances a certain number of gentlemen submitted designs under mottoes, in the month of October, last year.

Several meetings of the committee having been held, attended as promised by the architect of the Grocers' Company, the design under the motto "Civis," which proved to be that of Mr. Charles Barry, was selected as the best.

When about to invite designs for covering in the area, the Gresham Committee communicated with their several tenants whose premises were lighted in part from the open area, and promised that any design which might be chosen should be submitted to them before it was finally decided on.

Mr. Barry's design was therefore on view at Grocers' Hall, and he was instructed to attend a special meeting there, at which the tenants attended, and ultimately gave their assent to the design.

The separate approval of the Corporation and the Grocers' Company, especially as regarded the expenditure, being also necessary, some delay took place for this purpose, but all assents being finally obtained, Mr. Barry received orders to put the work in hand in June last.

The contract for the ironwork and glass of the roof is undertaken by Messrs. Whitford & Co., of the Regent's Canal Works, who have had large experience in iron roofing of large spaces. The building alteration will be done by Messrs. W. Cubitt & Co., and the decorative features by Messrs. Jackson & Co., of Rathbone-place.

With the view of interfering as little as possible with the convenience of the merchants and tenants of the building, the whole roof will be completed and fitted together by Messrs. Whitford at their works, and the pieces marked and numbered, so that the actual fixing may be certain in execution and subject to no delay.

The ironwork, which, as will be seen from the view we give, is somewhat complicated, is now in course of preparation by Messrs. Whitford, under the inspection of Mr. John Robinson, as clerk of the works, and it is expected will be ready for fixing in January or February next, the whole of the work being finally completed before Midsummer next.

HOUSE AT STOKE, NEAR COVENTRY, FOR MR. OTTO STRIEDINGER.

This building has been erected from the designs and under the superintendence of Mr. William Hale, architect, of Colmore-row, Birmingham, and the work has been well executed by Mr. Thomas Smith, builder, of Nuneaton. The arrangement of the plans was specially considered by the proprietor with a view to comfort, cleanliness, and saving of household labour, and, as contributing to this end, gas has been largely applied for heating the hall, many of the rooms, the two baths, and for the cooking-stoves; and a small gas-engine pumps the water, brushes the boots, cleans the knives, and assists in other domestic work. The bells throughout are on Zimdars's pneumatic system, and the entrance-gate can be opened from the servants' department and the front vestibule by a "Sesame" pneumatic appliance.

The house is efficiently ventilated, and we learn that these labour-saving appliances have satisfactorily borne the test of actual experience.

The outer walls up to the first-floor level are 14 in. thick, built hollow, with a 5-in. cavity, the two half-brick faces being tied together, every 18 in., vertically and horizontally, with iron ties heated and dipped in hot tar, the window and door reveals being built solid for 9 in. from the frames.

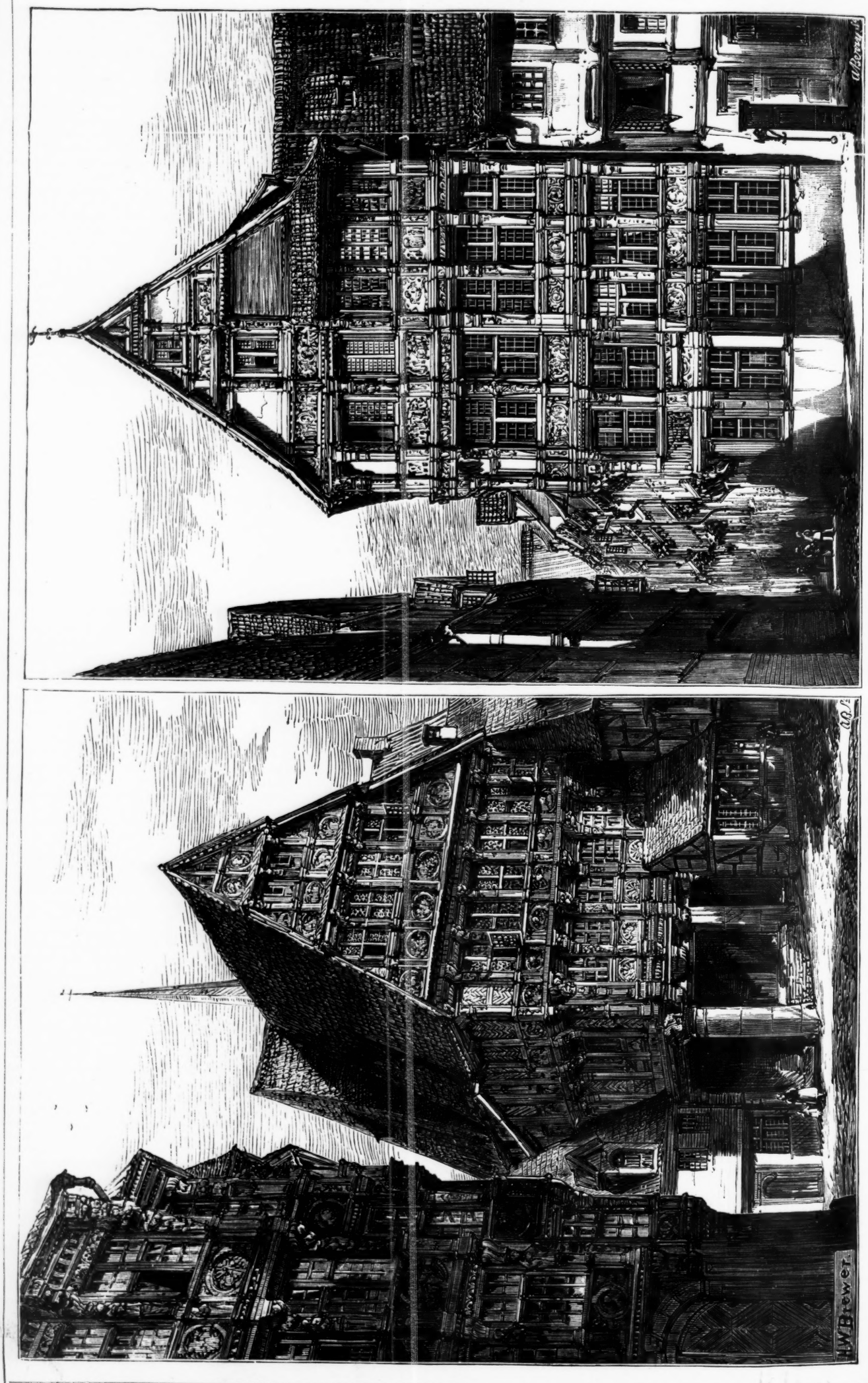
The architect has had external walls built in this manner for many years with the result that not only is the work substantial and inexpensive, but the house is cooler in summer and warmer in winter than one in which the external walls are solid; and as it dries much quicker than solid work the permanent internal painted decorations of a building may be proceeded with as soon as the structure is completed. With the exception of some parts of the main front, the exterior is solidly constructed of timber work, filled in flush on the inside with brick nogging; portions of the outside are covered with upright tiling, and the remainder is filleted and lathed and plastered between the timber work. The roofs are covered with Bridgwater tiles. The staircase and its panelled ceiling, the ceiling and dado of the hall and vestibule, and the woodwork of the principal rooms on the ground and first floors, are constructed in selected pitch pine. The chimney-pieces, which have been specially designed by the architect, are in pitch-pine, walnut, and coloured marbles, with brass enamelled and tile panels. The staircase and vestibule have the windows and door-panels filled in with figure subjects in glass, by Mr. Swaine Bourne, of Birmingham, and parts of the other windows have ornamented lead-coloured glazing in simple designs.

THE LEYS SCHOOL, CAMBRIDGE.

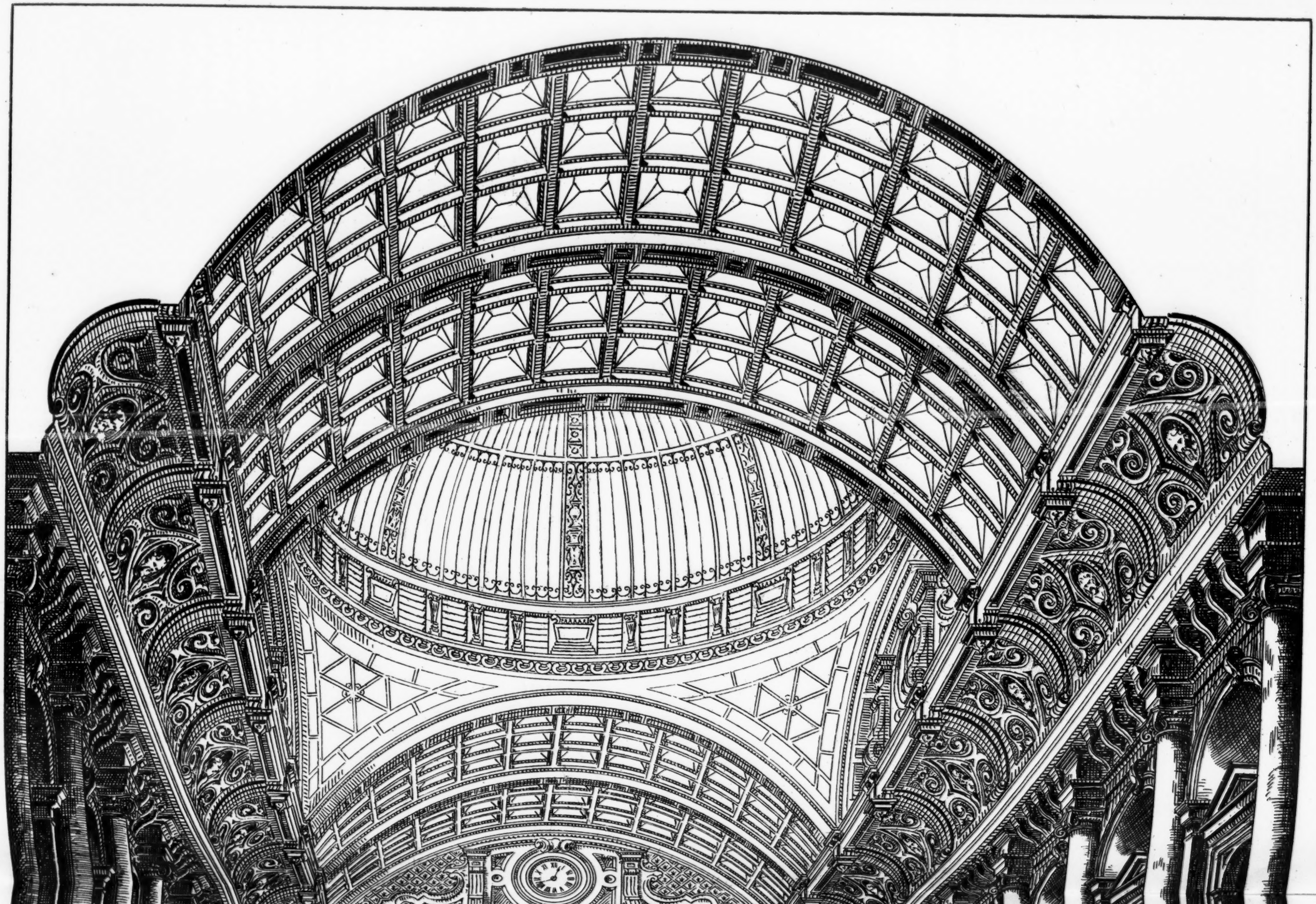
This school was founded about six years ago, for the purpose of affording to the youth of Methodist families and others,—the school being open to all,—the opportunity of high-class public school education, free from the special ecclesiastical bias of the larger public schools. The neighbourhood of Cambridge was selected as affording facilities for educational assistance and many other reasons. Twenty-one acres of ground, part of a well-wooded park, were obtained. The design, which was selected in competition, Mr. Waterhouse, A.R.A., having acted as referee, is by Mr. Robert Curwen, of Palace-chambers, Westminster, and Liverpool. The scheme comprises five blocks of buildings, alterations to the old mansion standing on the site, and a laboratory, gymnasium, racquet and fives court, quadrangle, &c.

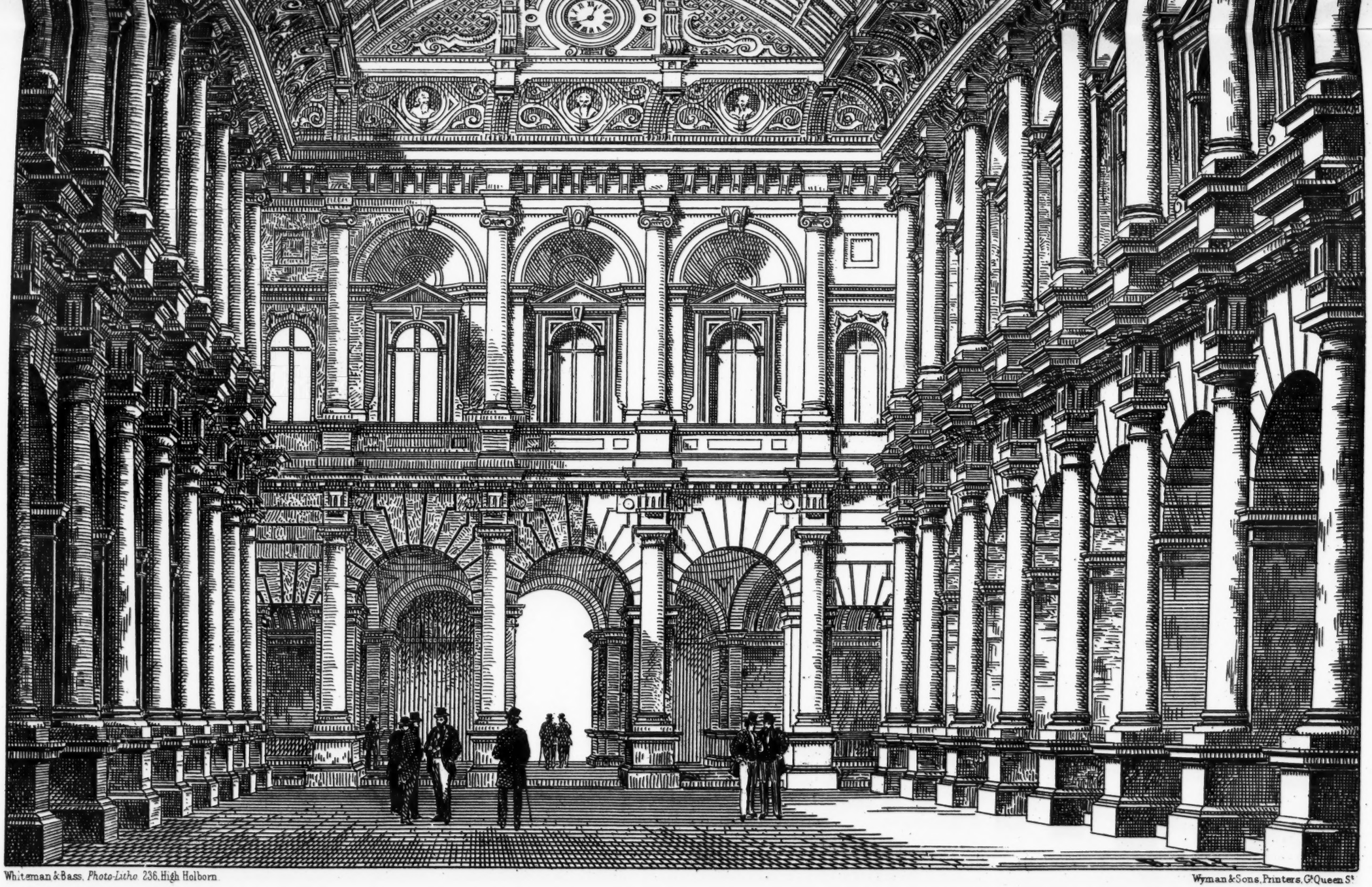
The north block, which contains lodgings for 80 boys, was erected by Messrs. F. & W. Pattinson, of Ruskington, Sleaford, at a cost of 12,000*l.* There are now about 180 boys, but eventually the schools will be capable of containing 300. The hall, of which we give an interior view, is placed more in the centre of the ground, at the back of the old mansion, and was erected by Mr. J. R. Denson, of Cambridge, at a cost of about 3,500*l.* The exterior is of red Haverhill brick and Ketton and Bath stone dressings. The slated roof is surmounted with an ornamental ventilating turret, the dado is of pitch-pine, and the roof of red deal and pitch-pine, varnished. The windows are filled in with quarry-tinted glass, in geometrical and floral patterns. There is also a stone carved chimney-piece at the end. The hall is heated by hot water, by Harlow, of Macclesfield, and has gas pendants by Brawn & Co., Birmingham. Underneath the hall is appropriated to class and other rooms. This arrangement was come to after the design had been selected. The kitchen adjoins the hall. There are also technical schools, so that the boys may be brought up to businesses as well as professions, carpentry, metalwork, music, &c. The other blocks, one fronting Trumpington-street, and the chapels, have for the present been postponed. The quantities were supplied by Mr. J. S. Alder, of Palace-chambers, Westminster. We understand that the school is flourishing and increasing in numbers through the able management of the Governor, the Rev. Dr. Moulton.

The Victoria Hospital.—A demonstration and church parade has been arranged for Sunday, October 14th, in aid of the Victoria Hospital for Sick Children, Queen's-road, Chelsea. A representative committee, consisting of delegates from the operative masons', bricklayers', painters', plasterers', and other societies, including the Labourers' Union, has been formed with the object of making the demonstration and parade a success. They have issued an appeal to the industrial classes of Chelsea. On the motion of Mr. Kenny, general secretary of the Labourers' Union, who has practically initiated the present movement, that 3,000 programmes, giving the names of the trades and the positions they shall occupy in the line of procession, are to be printed and sold at 1d. each, the proceeds to be applied to the expenses of the bands, so that all the money placed in the collection-boxes shall be handed over to the hospital authorities.



TIMBER HOUSES AT HILDESHEIM.



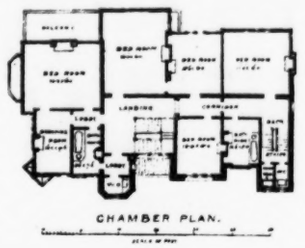


Whiteman & Bass, *Photo-Litho*. 236, High Holborn.

Wyman & Sons, Printers, Gt Queen St.

SELECTED DESIGN FOR ROOFING OVER THE COURTYARD OF THE ROYAL EXCHANGE.

MR. CHARLES BARRY, F.S.A., ARCHITECT.



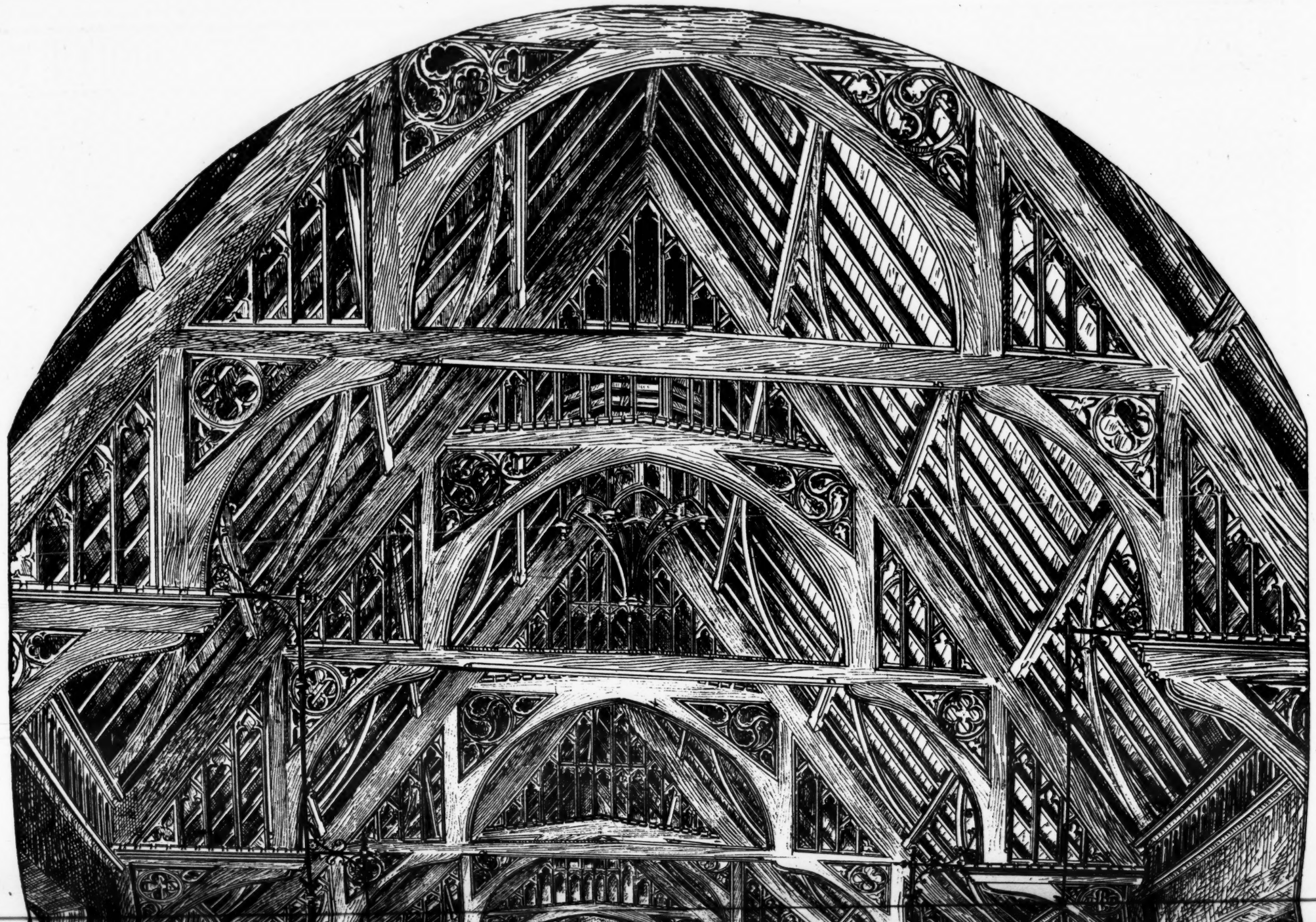
CHAMBER PLAN.

Vincent Brooks, Day & Son, *Photo-litho.*

HOUSE AT STOKE, NEAR COVENTRY. S.W. VIEW. Mr. Wm. Hale, Architect.

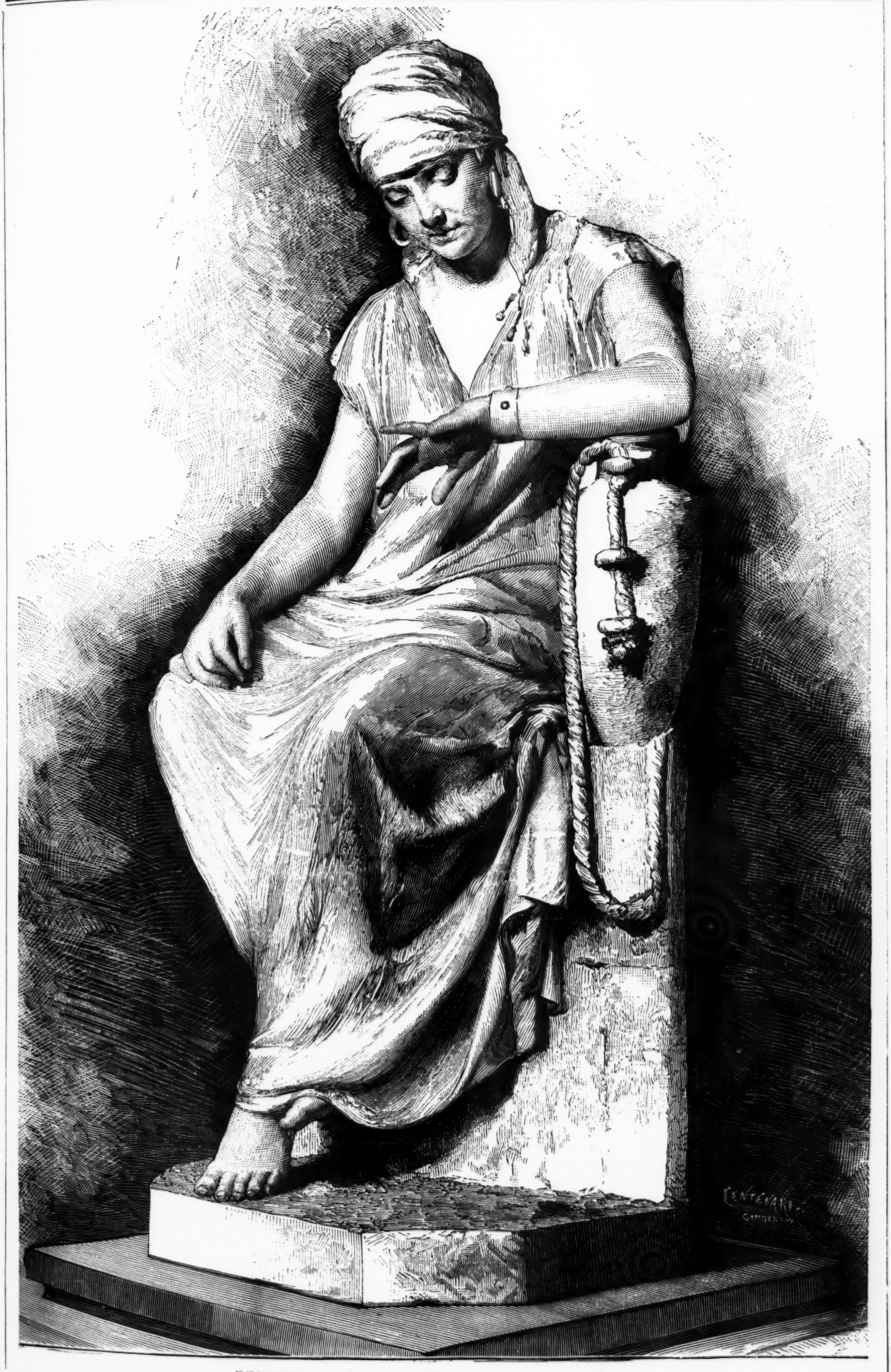
Vincent Brooks, Day & Son, *Photo-litho.*

HOUSE AT STOKE, NEAR COVENTRY. S.E. VIEW. Mr. Wm. Hale, Architect.



Dining Hall ▪ Regs School ▪ Cambridge ▪ Rob! Curwen Arch! London and Liverpool

Vincent Brooks, Day & Son, *Photo-litho.*



REBECCA: A Statue in Marble, by Girolamo Masini.

REBECCA.

STATUE IN MARBLE BY GIROLAMO MASINI.

At the National Exhibition of the Fine Arts at Turin, the statue of "Rebecca," which we illustrate in this week's *Builder*, was looked upon by many as the most perfect work of sculpture exhibited. The jury conferred upon it one of the two prizes available for statuary. Those who sympathise with the new tendency inaugurated by D'Orsi cite it as a prototype of a sculptural art which, while it adheres to the more elevated traditions of the past, combines perfection and carefulness of execution with the selection of forms, the modesty of movement, and the harmony of lines. In the design of his statue, Masini has discarded the drapery delivered by the traditions of Italian art, and has adopted in its place the costume of a Bedouin woman of the present day, disseminated by Vernet and other French painters. It is assumed that the latter probably differs little, if at all, from the very habiliments worn by the handsome daughter of Bethuel. The habits of life of these tribes have changed but little; their surroundings are still the same, owing to their faith and customs, and their abhorrence of innovation. The statue has been purchased by a rich Frankfurter. The sculptor, Signor Girolamo Masini, is a native of Florence, and the author of a fine statue in the South Kensington Museum.

THE EVOLUTION OF LONDON.

We have no mention of London before the time of Tacitus, who died A.D. 99; he describes it as a good place for trade, but not a colony or a municipality. It is not referred to by Cæsar in any way, and we therefore surmise that the Romans first became acquainted with the locality when Aulus Plautius, having driven the native forces into the Essex marshes, encamped north of the Thames pending the arrival of Claudius. That Emperor brought reinforcements and thus obtained an easy triumph, A.D. 43. The rise of London was then very rapid, as it became at once a centre of traffic, a mercantile emporium, and base of supply for the Roman troops.

This must of necessity have occurred because of its central position on the main lines of Roman road, a study of which will elucidate its early topography; for this purpose we do not need any recourse to the Antonine itineraries, because the old roadways have all continued in use to the present time. We thus find that this primitive area is bounded on the north by a native trackway, as a defined limit in that direction; the roadway in question came from Camulodunum, now Colchester, crossed the river Lea at Old Ford, thence by the drift-way to which Old Ford-road is an alternative route, and, by Old-street to the river Fleet, which was crossed at the low ground of Clerkenwell, and proceeding by Portpool-lane across Gray's Inn-road to Holborn, Tyburn, Brentford, and along the Portway for the south and west of Britain.

We know this must have been the case from the persistence of the name *Old* Ford; thus showing that the natives passed on clear of the site of London proper, without crossing the Thames, preferring to take the shallows further up stream. We are thus led to recognise a probable route by which Aulus Plautius had advanced, and we can also infer the course he would take on his subsequent march to Colchester, where was planted the first Roman colony founded in Britain.

I take it as certain that it thus became at once necessary to establish a ferry across the Thames for communication with the south-east coast, and we are thus introduced to Watling-street, which we are told was the legionaries' work, *i.e.*, it was made by Roman soldiers. It left the Kentish coast by three routes for Canterbury, crossed Shooter's-hill *viâ* Old Kent-road and Kent-street, in the marshes of Southwark; here causeways would be necessary to the ferry from Clink-liberty *viâ* Stoney-street to the northern bank about Steelyard; with the alternative of proceeding up the Wallbrook as far as Barge-yard, Bucklersbury; but the military route lay by the Dow or Water-gate, up Dowgate-hill, along Watling-street to the Prætorian-gate at the summit of the cathedral precincts, where it is assumed that the Roman General had entrenched his forces, and where Claudius might found Londinium.

The first beginning of Roman London would thus be along both sides of the Walbrook and Watling-street, and it may be taken for granted this was all that existed at the time of Boadicea's revolt, A.D. 61. Verulamium and Camulodunum both have preceding histories; both places had residential British chieftains with recognised names; both cities show us British coins from their local mints. London has no such precedent annals.

After this disaster London was first walled. It is probable that the N. boundary of the camp was continued S.E. along Cheapside to the Thames, probably at Billingsgate; there is no evidence to show that this was a stone wall. The next, and necessary stage of development, would be to bring the Colchester-road directly within this fortification by Aldgate and Fenchurch-street to a junction with the Watling-street ferry, and again through the camp and across the Fleet at Ludgate, for St. Giles, Tyburn, Verulamium, and Holyhead, including also the previous route S.W. *viâ* Brentford.

After this a further line of road was introduced called Irmine-street, which left the Sussex Coast, entered Southwark by Red Cross-street, to join the Watling-street at Clink Ferry, crossing London for the north, *viâ* Stamford Hill, for Royston, Huntingdon, and Lincoln, where was a colony. I am inclined to place the construction of Irmine-street as late as the time of Severus, A.D. 208, who made York an imperial residence, and kept up a continual stream of supplies by this route.

London grew thus till it was again sacked during the usurpation of Allectus, A.D. 293-6, after which, as I take it, in the reign of Constantine the Great, when it became an imperial mint town, it received its final development now known as the City proper, or London within the walls. This fortification extended from the Tower along the present line of London Wall to Ludgate; it was a solid stone wall, bonded with red tile in the finest style of Roman workmanship. Londinium then became Augusta, and after that the deluge!

At the present time, 1883, Aldgate still represents the Roman line of road to the eastern counties, diverted to Stratford in preference to the abandoned Old Ford. Bishopsgate still represents the old line of Irmine-street; Moorgate, Cripplegate, Aldersgate, and Newgate, are comparatively recent. Dowgate was superseded by the bridge, and Ludgate remains the representative of the old campestral Decuman gate.

Thus London was evolved from primitive roadways, as a military necessity of Roman occupation.

A. Hall.

PENZANCE NATURAL HISTORY AND ANTIQUARIAN SOCIETY.

The members of the Penzance Natural History and Antiquarian Society held their summer excursion on Friday, the 5th inst., when they were favoured with fine weather. The first excursion was made to Zennor Church in several brakes and wagonettes, and the many points of historical interest associated with the edifice were elucidated by the Rev. W. S. Lach-Szyrma, vicar of Newbyn West. It is a very primitive little building, dating from the twelfth century. The roof and walls are whitewashed and quite devoid of monuments of any kind, a fact which the President (Mr. T. Cornish) thought somewhat noteworthy. The seats are of a rude description, altogether innocent of paint or varnish, and some of the antiquaries were, in fact, inclined to believe that portions of the woodwork had been repaired by remnants of wrecks, which is not improbable, seeing the proximity of the church to the sea-coast. The building is said to be the only unrestored church in Cornwall, and among its chief characteristics is a curious font, an ancient Norman window, and some fair examples of carved bench-ends. One of these is illustrative of the Mermaid of Zennor, with which an old legend is linked. Modern Christians would probably consider a representation of a mermaid an unsuitable piece of ornament for a church, but this is how the apparent inconsistency is explained,—Like as our Saviour represents two natures, the human and divine, so the mermaid also typifies two natures. For this reason the mermaid seems to have been held to be a fit emblem for the church; and the legend has it that, in the old days, the Zennor Church choir sang so charmingly that even mermaids were induced to come up from the coast to hear the music. One of these is said to have entered the church and so fascinated the squire's son by her beauty that she attracted him to the cave. But here he met with a cruel reward for his attention, for he was drowned. Such is a brief outline of the Zennor legend.

The party next proceeded to Trereen, and walked on to the footpath leading to Gurnard's Head, where there is a singular prehistoric structure. No one was able to explain the purpose for which it was designed. It is an inclosure with thick walls, and an extended entrance,—too large for a grave and too small for a dwelling-house, as an observer remarked. Known to have been in its present condition for about a hundred years, the structure has for this reason been accepted as prehistoric. Bosrigan was next visited, and after a light luncheon had been served, the site of the Cliff Castle, with its Logan Rock and weather-worn stones, was inspected. The President claimed that it was a very fair specimen of the cliff castles which abound all round the coast. Their peculiarity is that they are built upon inaccessible points along the coast. What the castles were intended for, he said, was exceedingly obscure. They are so placed on headlands that landing on them is impossible. Therefore, Mr. Cornish thought it fair to assume the castles were built for the purpose of allowing the inhabitants of an invaded district to retreat to them until the invaders had departed. Some time was spent in examining the castle, in moving the Logan Rock, overhanging as it does a splendid bit of coast scenery, and the rock basins that are in course of formation. The President would not at all allow that these basins are carved out. He contends that the basins are naturally formed, and pointed to what lay around him in support of his contention.

Subsequently, Chun Castle came under observation. This, it was explained, was one of the best examples of hill castles known in the country, Castle-an-Dinas and Trencrom being inferior to it in the order named. The plan of Chun Castle is a double wall, the construction of which is particularly noticeable. The stones are unwrought, and set apparently without tools, being put together so as to make a tight, well-bonded wall. Inside the wall the Cambrian Archæological Society discovered a font with water in it, and all round the inside there are little chambers formed by small stones, very much after the fashion of Restormel Castle, Lostwithiel. In 1862 the side gates were 6 ft. high, while now they only attain a height of 3 ft.,—a fact which was generally regretted. A short distance before Chun Castle is reached, the remains of an ancient British village are to be seen. There was no doubt in the mind of the President that it was a prehistoric village. The huts are well marked out, and can be readily detected; albeit, the inside of each is overgrown with heather and ferns. Villages of this sort have, according to a recent work by Professor Michell, been inhabited in Scotland in the present century.

The party shortly after rejoined the carriages, and drove homeward, calling at Madron Church,—the distinctive features of which were explained by the Rev. J. Morrell,—and returning to Penzance shortly after six p.m.

THE LAND LAWS.

Mr. William Barber, M.A., Q.C., Professor of the Law of Real and Personal Property to the Council of Legal Education, presided over the Department of Jurisprudence and Amendment of the Law at the Huddersfield Congress of the Social Science Association, and in the course of his address he said,—The risks which are likely to arise from a too minute subdivision have, I think, been overrated. A statutory minimum limit might, of course, be fixed, but even if there were no such limit, it would generally happen that, instead of an actual partition of a small inheritance, one of the sons would buy up the shares of his brothers and sisters. Another reform which is, I think, much needed, and may now be usefully attempted, is a further reform of the law of mortgage of real estate. I propose that it should be enacted that every mortgage, however created, and whether purporting to convey the property or not, should operate only as an equitable charge; that a power of sale and the other powers commonly invested in mortgage

deeds should be conferred by statute on the mortgagee, and that there should be implied in every instrument of charge a covenant for the payment of the mortgage debt and interest. The operation of the statutory clauses might be controlled by the instrument of charge, but in the majority of cases little alteration would be needed; a short description of the property, a statement of the amount advanced, of the time fixed for repayment, and of the rate of interest, would be all that is required in an ordinary charge. The result would be this: in the comparatively few cases in which a mortgagee is compelled to realise the mortgaged property in order to obtain repayment of the mortgage debt, he would exercise his statutory power of sale, and pass the legal estate to the purchaser, without any necessity for the concurrence of the mortgagor. In the great majority of cases in which the mortgage debt is paid off, no reconveyance would be necessary,—a simple receipt endorsed upon the memorandum would at once extinguish the charge. And then, in order to avoid the complicated questions which so often arise as to the rights of mortgagees *inter se*, a register of mortgages should be established, and the priority of mortgages depend exclusively on the order of registration. The law of mortgage is not one which merely affects the relation of mortgagor and mortgagee; a mortgage transaction is not one in which they alone are selfishly interested: the whole community are affected by the existing law, and a man who never borrows any money on his own land, when he comes to buy or sell or deal with real property, is often burdened with a heavy expense, which is solely attributable to our present cumbrous system. If he buys property, the abstract which is supplied to him frequently consists, more than one-half of it, of mortgages, further charges, sub-mortgages, transfers, and re-conveyances; the legal estate has to be traced through a tangled mesh of incumbrances, and the difficulty and expense of investigating the title are enormously increased. To some extent the Conveyancing Act of 1881 and the shortened statutory forms will lessen the inconvenience; but the only effectual remedy, I am convinced, is to dissociate the law of mortgage from the law pertaining to the conveyance of real estate. Besides the reforms which I have mentioned, there is much preliminary work to be done before any complete system of registration of title can be successfully applied to our law of real property. The large Ordnance Survey must be completed; copyhold and customary tenures must be converted into common socage tenure, for which unification of tenure there can be no simplification of title; the Statute of Uses ought to be repealed; and further restrictions ought to be placed upon the power of a settlor to direct the accumulation of the income of settled property; and there are other subsidiary reforms which must be taken in hand before we can obtain for our landed system a simple tenure and the facilities of ready and inexpensive transfer. But to attempt more than can be successfully carried through is only to divide and weaken efforts, the united strength of which is required if any useful reform, however unpretentious, is to be effected in our law of real property. The programme which I have sketched will furnish more legislative work than is likely to be accomplished before the next congress of this association. These suggestions may seem to be mere nibblings at reform. There are other much needed changes of law as important to the community as any which I have mentioned. The recent amendments of our Bankruptcy and Patent Laws, the extension of the civil jurisdiction of local courts, the operation of the new rules of the Supreme Court, and the great social question, in which I take a special interest, whether the degradation of the poorer classes, "social wreckage," as Mr. Francis Peek has called it, is not at any rate in some measure due to bad law or a faulty administration of law; these and a score of other like subjects might well have found a place in a presidential address. But I have purposely kept within the limits which at the outset I prescribed for myself. A sound landed system lies at the root of national prosperity. If capital is to be more strongly attracted to the cultivation and improvement of the soil; if the title to land and its mode of transfer are to be simplified so as to promote its more free and healthy circulation; if, in short, we are to have a sounder landed system than we at present possess, this result is to be attained, not by startling innovation, but by patiently continuing the process, which the slow working of our legislative machinery makes so unattractive and wearisome, of gradually uprooting from our law of real property the obsolete principles of manifold complications, the growth of ages, which prevent it from adapting itself to our growing social necessities, and from conforming itself to the higher standard of an improved moral sentiment.

ART AS APPLIED TO TEXTILE AND OTHER MANUFACTURES.

In the Art Department of the Social Science Congress at Huddersfield, on Monday last, a paper was read by Mr. Robert W. Edis, F.S.A., on "How can a School of Art, as applied to Textile and other Manufactures, be best supported and utilised, with a view of meeting foreign competition?" He said:—In promoting some schools for the improvement of art and technical knowledge applied specially to textile fabrics, with which Huddersfield and the district are particularly associated, it seems to me essential that the art-teaching of your school should be associated with practical or technical teaching in its largest sense, and with the special object of elevating the defined branches of industry from which the workers of both sexes more especially obtain their livelihood. A competent and sufficient staff of teachers, who shall devote their whole time to the work before them, should start on a basis entirely different to that promoted generally in the present Schools of Art. A proper programme of preliminary and advanced teaching, theoretical and technical, should be insisted upon, somewhat similar to that carried out in weaving schools at Verriers, Mulhouse, Crefeld, Ghent, Rouen, and numerous other places. After the first preliminary course of drawing the students should be taught freehand from natural flowers and objects as far as possible, and to arrange the grouping of natural objects conventionally or naturally in design for various tissues; competent masters should be engaged capable of teaching not only the theory but the practice of weaving, dyeing, and chemistry as applied to various colours, their fixity and durability, with short practical lectures showing by experiments the different arrangements of colours, and pointing out the various combinations and differences effected by the placing in juxtaposition of various colours. The art teaching should be by progressive stages. The technical instructor should teach the students how to apply to practice and to utilise the scientific and artistic knowledge derived from the teaching in the classes for drawing and design. Dexterity of hand, with a habit of rapidity of practical execution, should be sought for rather than the stippling and excess of shading which are now generally taught. The pupils should be taught in a common-sense manner,—each professor or teacher should endeavour to adapt his teaching to the capacity of the pupils; he should strive to place under the eye of the pupil the objects of which he is speaking, and to satisfy himself by frequent questions that his pupils have understood him. The progressive advanced course should include the elements of industrial mechanics and of chemistry, with special reference to its application to local industry; the various processes of weaving, and all connected with it; the theories of tissues, their classification, manufacture, composition, and analysis; the theory of colours, their contrasts and combinations; ornamental design, comprising the drawing of flowers from Nature, the composition of groups of ornaments and flowers, and other natural objects applied to textile fabrics of all kinds, together with instruction needful for their application to the looms, and general industrial design. As far as practicable, foremen of the principal factories should be induced to ally themselves with you, and be paid for short courses of simple lectures; or, still better, conversational discussions, aided by practical teaching with material, setting forth all the preliminary operations of weaving, such as winding the bobbins, preparing and mounting and rolling up the warp; of the various apparatus, &c., employed in these operations for hand and power loom weaving; the preparation of the weft, winding, dressing, &c.; of the setting of patterns, and of general weaving. The pupils should then be taught to set their own designs, and to practise themselves in the technical work under the foreman or teacher, and explanation should be given in every branch in a systematic manner in all the operations connected with weaving, from the design to its execution on the loom, and, if possible, this teaching should be assisted by periodical visits to the various factories where the work could be explained in a more practical way. The pupils should also be taught to analyse and reproduce, themselves, in woven fabrics, all kinds of specimens of stuffs, from the most simple to the most complicated, and thus to acquire a thorough artistic and technical knowledge of everything relating to the production of textile fabrics. I believe such a system as this, as practically carried out in the school of Ghent, would lead to the vast improvement of all textile work, and the pupils thus trained would naturally find employment in the factories at remunerative wages, and the improvement in all work would, I believe, tend materially to improve the trade of the district and to satisfactorily meet foreign competition. Attached to each school should be a well-selected library of works pertaining to ornamental and other design, together with all the best works on applied sciences, and periodical publications illustrating the various inventions and artistic designs of other countries, which such people as might be recommended by the teachers should be allowed to have on loan for a certain period. If this could not be arranged, the library should be made free to all, and pupils encouraged to use and study in it, while occasional short lectures might be given on special subjects, made as interesting as possible by drawings on the black board, or with examples borrowed or provided for illustration. Interest the students by every means in your power. Point out to them in an intelligent manner the difference between good and bad ornament. Show them how to group different forms, to make various combinations. Teach them harmonies of colouring, and exemplify this teaching by surrounding them as much as possible with good specimens of textile fabrics. Have beautiful things about them, for remember if you surround your workers with all that is mean, hideous, and commonplace in design, no teaching in the world will be of any lasting service. It seems to me that the question of the proper support and keeping up of these special schools, in which the artistic and technical feeling should be made especially applicable to the particular trade of the district, is one in which each municipality or local district authority should have a special interest, and that they should be directly supported by the district quite as much as the preliminary or Board schools; for surely it is as much a matter of interest, from a purely commercial point of view, that our workmen and workwomen should receive an education fitting them for the carrying out of the trades of the country, and to meet the ever-increasing improvement in artistic and scientific productions throughout the world, and to hold their own against the art industries of other nations, as to insist on a general compulsory primary education of the children of the masses. The promotion of a system of what I may call industrial education, which shall best enable the individual to follow his or her particular trade with advantage to the State and profit to the individual, is surely one which demands State recognition as much as primary education in reading, writing, and casting up accounts, as each district is likely to reap the benefits directly of improvement in its particular trade, by improved education of the workers, and through them of the higher artistic and commercial value, whether directly by higher price or by increased demand. Each district should pay a proportion of the charges for that educational system by which it will particularly reap the profit and advantage. It is unfair, however, that the State should leave the whole cost of this education to the town or district; in all other countries the educational system is properly organised and supported by the State and various local authorities as being of paramount importance to the manufacturing interest of their respective countries. Why should not a similar State education, assisted by local subsidies, be organised and supported in this country?

Mr. G. Marchetti also read a paper on the same question. The author said we must not regard what we have done as being sufficient for at least our own generation, but rather as an incentive to press forward and do more. This can be accomplished in great measure by our schools of art; but to render them efficient

and popular, we must help and patronise them to the utmost of our ability. We must urge the young to attend them, we must all of us do our best in every way to enable them to multiply and prosper. It is, therefore, necessary that schools of art be supplied with every means for ensuring the successful training of students, and for enabling them to acquire that experience that is necessary for keeping at least abreast with their Continental brothers. Manufacturers and merchants should, however, not lose sight of the fact that, in supporting schools of art, they further to a great extent their own interests. No success can be obtained by the former if English manufactures do not possess the required artistic value, and such value cannot be arrived at unless we support those schools where art is taught.

In the ensuing discussion it was denied that English art was behind Continental art.

THE IMPROVEMENTS IN AVE MARIA-LANE AND WARWICK-LANE.

Chiefly under the auspices of the Dean and Chapter of St. Paul's and the Stationers' Company, who have been instrumental in sweeping away several of the dilapidated old structures in the locality, a new face is being imparted to Ave Maria-lane and Warwick-lane, which are at the same time being considerably widened. The Dean and Chapter have already erected several new buildings on the west side, and in the grounds in the rear beyond, as residences for the minor canons and other officials connected with the cathedral, and we now notice that all the old shops and other structures belonging to the cathedral authorities, and extending southward from their new buildings to the boundary of the premises which have just been erected by the Stationers' Company, are about to be taken down, and replaced by new structures. Adverting to the block which has for some time past been in course of erection in front of their hall, by the Stationers' Company, it may be stated that it is now almost completed, presenting a handsome and richly-carved elevation in Portland stone and white Suffolk brick,—what will eventually form the central portion of the Ave Maria-lane frontage of the block to be extended being entirely in the first-named material. Over two arches in this part of the elevation is the following inscription carved in stone:—"*Verbvm Domini manet in Eternvm*"; and on each side of the inscription is a carved representation of a large folio volume. From Amen Corner to the south boundary of the building, so far as at present erected, the Ave Maria-lane frontage is 90 ft. in length, but it will ultimately be 150 ft. long when the extension in the direction of Ludgate-hill, uniform with that on the north side of the central portion of the structure, and which is now in progress, is completed.

Another prominent building has just been completed in Warwick-lane, opposite the west end of Paternoster-square. It immediately adjoins the buildings recently erected by the Dean and Chapter of St. Paul's, already referred to, and has been erected for the proprietors of "Whitaker's Almanac." It being the wish of the owners that the building should, in some respects, present an external appearance uniform with the cathedral residences adjoining, the designing of the building was confided to Mr. Ewan Christian. Although, like its neighbours, the building is faced with red brick, set in black mortar, it presents necessarily a more commercial appearance than the chapter buildings, and is carried to the unusual height of 92 ft., containing four lofty stories above the ground-floor, in addition to dormers set back from the general frontage line. At the north angle the elevation is surmounted by a step gable, and at the south angle there is an ornamental chimney-shaft. The entrance to the building at the ground-floor is by a flight of steps in white marble. Mr. Brass, of Old-street, was the contractor. It is intended ultimately to remove all the old buildings on the west side northwards, and to widen the thoroughfare throughout to Newgate-street.

Builders' Benevolent Institution.—The late Mr. Henry Couchman, of Lee-road, Blackheath, has bequeathed the sum of 200*l.* to this Institution. The annual dinner of the Institution will take place on the 8th prox.

EVOLUTION IN ART.

In the discussion which followed the reading of Mr. Cave Thomas's paper* on this subject before the Art Department of the Social Science Association's meeting at Huddersfield,

The President (Sir Rupert Kettle) regretted that Mr. Thomas was not present, so that he might give a more practical elucidation of some of the propositions he had laid down. It appeared to him, taking the broadest view of the question, that to treat proportion as a fixed quantity was open to exception, because his impression was that the proportion was relative and not positive. If the word "beauty" had been substituted for the word "proportion" in the paper, it would have been more easy to understand. The subject was an occult one, and scarcely to be dealt with offhand, but he considered that the thoughts applied to evolution would have been more appropriate if applied to devolution.

Mr. J. W. Davis (Halifax) questioned the statement that caricature preceded decadence in art, and said that in English art it was the forerunner of the best art that we have seen. The caricaturists of the close of the last and the beginning of the present century were followed by the production of our great water-colour artists, and by the formation of the Water-Colour Society.

Mr. T. C. Horsfall (Manchester) denied that the art of a nation was the index to its intelligence, art being influenced by many things besides intelligence. At the beginning of the present century England possessed domestic art in a greater degree than at present. Every piece of domestic furniture and everything used for domestic life bore the impress of traditional art. Owing to the development of the manufacturing system, domestic art has been forced out of the lives of the larger part of the English people; but, although this was a regrettable fact, they could not say that it was the result of the decadence of the intelligence of the nation. As to the statement that it was a mistake to place in our public galleries the products of archaic art, Mr. Horsfall said that any intelligent working man who might be induced to spend an hour or two in their public galleries could, with a little guidance, easily gain the power of enjoying the pictures of Giotto or Fra Angelico.

After a few remarks from Mr. F. F. Abbey (Kirkburton),

The President, in closing the discussion, said he considered that full justice had not been done to caricaturists as the followers of a branch of art requiring great skill, and spoke of the usefulness of caricature in the work of education.

THE NEW MUNICIPAL BUILDINGS FOR GLASGOW.

A PROCESSION OF BUILDING TRADES.

On Saturday last the foundation-stone of the new Municipal Buildings for Glasgow was laid with Masonic honours by the Hon. John Ure, Lord Provost of the City, associated with Wm. Pearce, esq., Right Worshipful Provincial Grand Master, and the office-bearers of the Provincial Grand Lodge of Glasgow of Ancient Free and Accepted Masons of Scotland, and numerous other lodges. The day was observed as a general holiday, and the demonstrations of popular enthusiasm, said to be unique in connexion with similar events in the history of the city, were fortunately favoured by the fineness of the weather. A notable feature of the day's proceedings was a monster procession, consisting, it is reported, of fully 25,000 people, made up as follows:—The carters, 600, besides 48 vehicles and nearly 400 horses; the building trades, 5,650; textile trades, 2,100; miscellaneous, 4,700; metal workers, 7,450; Corporation and Clyde Trust *employés*, 3,200; shipbuilders, 1,500; and the Linthouse Ambulance Corps, 20.

The Building Trades' section of the procession was led off by the *Operative Glaziers*, who turned out to the number of about 250. In front of them the standard-bearer carried a flag with a motto in Latin, meaning "Give us Thy light, O Lord," while one man in the ranks carried the glaziers' coat of arms with the motto "We thank God for the light." Among the other articles borne by the glaziers was a picture of Mr. John Bright in stained-glass, a crystal model of a monument, a glass crate, window ventilators, several specimens of stained-glass, &c. Close behind the glaziers came the *Operative Slaters*. They numbered fully 350, and in front was carried the Union Jack, while at some distance behind was a banner bearing the motto, "And make sure." Scattered through the ranks were various models,—one showing slaters busy at work on the roof of a house, another two men on their way to work, and others exhibiting a slate knife and hammer wreathed in flowers. The third group, the place for which had been secured by ballot, was that of the *Sawmillers*, who turned out about 400 of their craft. At their head were carried flags showing the motto of the society and with trade emblems emblazoned thereon, while the men carried models of a circular saw-bench, a plane saw-bench, and a saw-sharpener. Accompanying this section were two lorries, each drawn by two horses tandem. One of them carried a bench with saw sharpeners at work, and on the other, which was fitted all round with circular tops of window frames, a planing-machine was kept in operation by means of belting put round small wheels fixed on the axle of the vehicle, and the shavings produced were thrown to the spectators. The *Operative Masons*, who came next in order, numbered 1,400. At their head was the flag of the trade, bearing the motto, "Unity, Friendship, and Truth." On a van was arranged a stone pulpit, whilst on two lorries which accompanied the section were models of Corinthian capitals, bases, columns, &c. The *Bricklayers* numbered about 300, and they carried two banners and two flags with the name of the association emblazoned thereon, and bearing the mottoes, "We join to protect," and "Let Glasgow flourish." The processionists also carried a gigantic model of a trowel, 4 ft. long in all, the blade being 3 ft. in length by 15 in. in breadth. The other devices carried here were a hammer and a jointer, and a model of a chimney-stalk. The *Operative Plasterers' Protective Association* was represented by 200 men. They carried one banner, bearing the name of the association, and a statuette of Sir Walter Scott, while on a lorry there was shown a model of the new Municipal Buildings. The *House and Ship Joiners and Cabinet-makers* turned out between 1,800 and 2,000 representatives. The central branch headed the section with three flags and a large banner, the principal one bearing the name of the association, and under two hands joined was the motto, "United we stand, divided we fall," another having the trade injunction, "Secure your rights." The other branches represented were the Clyde, Partick, Whiteinch, Govan, Glasgow North, Glasgow South, and Glasgow East. This large division carried no fewer than twenty-eight models, many of them manufactured of curled shavings. Considerable time must have been devoted to the production of some of the articles, and much taste and skill was displayed in the manipulation of the frail material. The *French Polishers* totalled 125. In the front was carried a large two-pole banner, bearing the city arms, with two figures, and the motto, "Union is strength"; and a few yards behind was a smaller banner showing two clasped hands, with the motto, "United to protect, not to oppress." There were also a trade banner and a Union Jack in this detachment. The *Lath-splitters*, though a small body only numbering eighty, had besides their trade flag a number of interesting models. The principal of these were an elliptic arch supported by two columns and two pilasters all formed of lath, a model of a cottage in lathwork, and two trophies of tools used in the trade, while on a lorry which accompanied the party were two men splitting laths. The *Painters*, who numbered 300, carried three banners and two flags, one of them bearing the motto, "Ours are the arts of peace, to live like brothers, and to embellish life," and "True to our colours"; and another "The good of the people first." The processionists carried a number of models of implements used in the trade. The *Plumbers*, to the number of 400, brought up the rear of this division of the procession. They had one flag, bearing the well-known motto of the Volunteer movement, "Defence, not defiance," and among the thirty models carried were those of a bath complete, with plunge, shower, and spray; a brass force-pump, ventilators, terminals, &c. At the head of each trade was a brass band or some pipers.

The buildings, which have already been

* See *Builder*, p. 445, *ante*.

described at some length in our columns,* are being erected by Messrs. Morrison & Mason, contractors, Glasgow, from the designs and under the superintendence of Mr. William Young, architect, London, whose design, as our readers will know, was selected in competition. Mr. E. C. Morgan is the clerk of works. The cost of the buildings is estimated at 250,000*l.*

At the banquet given by the Lord Provost in the evening, Mr. Young, responding to the toast of "The Architect and Contractors," expressed his thanks to Mr. Carrick, the City Architect, to whom he was indebted for the general scheme of the plan of the new buildings, besides many valuable suggestions. Mr. Mason also responded, on behalf of the contractors. Councillor Laing, in proposing "The Referees in the Designs Competition,"—Mr. Charles Barry and Mr. Carrick,—paid a high tribute to the professional abilities of those gentlemen, and stated that Mr. Carrick had now been upwards of forty years in Glasgow acting as Borough Engineer. Mr. Barry, in replying, took occasion to remark that the system which had been adopted by the Town Council of Glasgow in instituting the competition had up to that time been unknown.† The conditions were carefully considered by the Lord Provost and the Town Council, with such assistance as Mr. Carrick and himself could give them, with the object of securing the best result for the public, and of being entirely fair to those who were asked to compete. It would be some little satisfaction to the Lord Provost and the Council to know that the conditions of the competition had become more or less a model throughout the kingdom. The Royal Institute of British Architects, of which he had the honour to be a member, had adopted them as their model, and the Government, in the erection of new offices which were now proposed, had adopted them in part. He had little hesitation in saying that they would yet come to be almost universally adopted.

BUILDING PATENT RECORD.‡

APPLICATIONS FOR LETTERS PATENT.

4,527. R. E. Cox, London. Furnace stoves and grates for slow combustion, &c. Sept. 21, 1883.

4,546. G. F. Harrington, Ryde. Cowl arrangements for ventilation. Sept. 24, 1883.

4,586. A. Barker, London. Bracket for seats, shelves, &c. Sept. 26, 1883.

4,613. W. G. de F. Garland, East Molesey. Construction of fences. Sept. 28, 1883.

4,618. H. C. Paterson, Glasgow. Ventilating buildings. Sept. 28, 1883.

4,641. G. G. MacWilliam, London. Water-closet basins. Sept. 29, 1883.

4,662. C. H. Fitzmaurice, London. Apparatus for ascending towers, chimney-shafts, &c. Oct. 1, 1883.

4,684. A. J. Boult, London. Ventilating apparatus. (Com. by L. J. Wing, New York, U.S.A.) Oct. 2, 1883.

4,697. W. R. Lake, London. Water-closets, &c. (Com. by J. P. Putnam, Boston, U.S.A.) Oct. 2, 1883.

NOTICES TO PROCEED

have been given by the following applicants on the dates named :—

September 25, 1883.

2,613. F. Newman, Ryde. Traps for flushing and inspecting drains. May 25, 1883.

September 28, 1883.

3,146. M. Syer, J. Gilmore, and W. R. Clark, London. Flushing apparatus, &c. June 25, 1883.

Oct. 5, 1883.

4,127. G. M. Edwards, London. Metal laths for use in the formation of ceilings, &c. Aug. 27, 1883.

ABRIDGMENTS OF SPECIFICATIONS,

Published during the week ending September 29, 1883.

427. C. Weygang, London. Manufacture of fibrous material applicable for floor-cloths, roofing-felt, &c. June 26, 1883. Price 4d.

The fibrous material is mixed with a siccative oil, which oil has previously been boiled into a thick condition and rendered mixable with water by means of an alkali.

457. A. Arnott, London. Fastenings for doors, &c. Jan. 27, 1883. Price 2d.

These fastenings are so made that on a pressure from the inside the door will open outwards. (*Pro. Pro.*)

473. J. Hall, Stourbridge. Manufacture of porcelain fire-clay baths. Jan. 29, 1883. Price 4d.

The outsides are painted with priming powder heated, which when cold is rubbed smooth with pumice stone. This is done twice, when three coats of the colour mixed with varnish are given, and the bath is finally enamelled.

481. R. Stone, New York, U.S.A. Apparatus for grappling and hoisting stone. Jan. 29, 1883. Price 8d.

The claws of the grapple are jointed to a crown-piece and connected to a vertical rod. Springs force these claws on the stone, and two ropes are fitted, one for hoisting the stone in the claws, and the other for opening and releasing the same.

489. J. A. B. Bennett, King's-heath, and J. Herd & B. P. Walker, Birmingham. Heating and cooking stoves. Jan. 30, 1883. Price 2d.

The products of combustion pass from the fireplace through vertical flues having deep horizontal corrugations. The air to be heated passes between these corrugations and the outer casing. (*Pro. Pro.*)

505. J. H. Norrington, Harlesden. Attachments for bracket-arms or shelves to their standards. Jan. 30, 1883. Price 6d.

A U-shaped clip passes into a hole in the standard and partially surrounds the same, and its ends have vertical slots to receive the locking-pieces of the bracket socket.

531. M. Benson, London. Drain tiles. (Com. by J. Lynch, Washington, U.S.A.) Jan. 31, 1883. Price 4d.

The upper part is made porous and the lower part is glazed.

532. M. Benson, London. Terra cotta tiles. (Com. by J. Lynch, Washington, U.S.A.) Jan. 31, 1883. Price 4d.

The face is glazed and the back part is porous.

576. D. F. W. Quayle, Castletown. Window-sashes. Feb. 2, 1883. Price 6d.

Bars are fixed to the sashes, which secure the same when closed by entering recesses in the walls; but when the sash is opened they move automatically with it and cover the opening.

599. S. S. Hellyer, London. Water-closets and slop-sinks. Feb. 3, 1883. Price 6d.

Two orifices are employed for the flushing rim, which are placed opposite each other, and are so set as to deliver their streams round the basin in opposite directions. The overflow lip is formed round the basin a little below the flushing rim.

Published during the Week ending October 6, 1883.

5,685. F. Smith, London. Walls, arches, and other brickwork, &c. Nov. 29, 1882. Price 6d.

The walls have an inner or outer face, or both, in which the visible joints are much narrower than usual, though the usual quantity of mortar is placed between the bricks. This is effected by making a small beading round the edges of the bricks.

544. F. J. Austin, London. Automatic sanitary flushing apparatus. Feb. 1, 1883. Price 2d.

The cistern is emptied by a syphon consisting of a cap over the discharge-pipe. Above the cistern is a tank containing the disinfectant, the valve of which is opened by the rush of water. (*Pro. Pro.*)

600. F. Fletcher, Warrington. Cooking-stoves or ranges. Feb. 3, 1883. Price 2d.

A passage is made from the oven to the flue, which is governed by a damper. When gas is used the burners are placed in the bottom of the oven, and when coal is used the flues from the fire-place surround the oven. (*Pro. Pro.*)

608. T. Cliffe, Huddersfield. Removing the superfluous body or glaze off enamelled bricks or tiles. Feb. 5, 1883. Price 2d.

The brick, &c., is subjected to the action of a revolving belt on which are pins or teeth. (*Pro. Pro.*)

615. T. Webster, Edinburgh. Apparatus for opening and closing curtains. Feb. 5, 1883. Price 2d.

The curtains are attached to rods which slide in a longitudinal groove in the curtain-pole. (*Pro. Pro.*)

619. G. W. von Nawrocki, Berlin. Hinges for doors, &c. (Com. by O. A. Ludewig, Stettin.) Feb. 5, 1883. Price 4d.

The hinge is made in two parts, which are held together by a button, and a disc is made to catch the oil.

637. W. White, London. Rendering existing walls damp-proof. Feb. 6, 1883. Price 4d.

The wall is scraped quite clean, and a face of tiles is applied thereto, which tiles are held in position by a composition as described in Patent No. 4,065 of 1881, which is poured in between the tiles and the wall. The tiles may be made by distributing over their surfaces a quantity of small coal or coke. The tiles are then pressed and burned, when the coal burns away, leaving a honey-combed surface into which the composition enters and binds the tile to the wall.

662. F. Wirth, Frankfort. Artificial stones made from cork shavings. (Com. by K. Grungweig and P. Hartmann, Ludwigshafen.) Feb. 6, 1883. Price 4d.

Pulverised cork is mixed with a heated starch paste and immediately dried at a high temperature.

684. J. G. Stidder, London. Apparatus for supplying, flushing, discharging, and trapping arrangements for sanitary and sewerage purposes with boxes and gratings. Feb. 7, 1883. Price 6d.

This consists of a variety of details for increasing the efficiency of such apparatus in intercepting effluvia, &c., which are shown by twenty figures in the drawings, but which cannot be condensed.

695. J. Hay and G. Robertson, Glasgow. Window-sashes. Feb. 8, 1883. Price 4d.

The cords are attached to sticks which are inserted in recesses in the sides of the window-sash, but which can easily be removed.

705. W. Russell, Manchester. Kitchen and cooking ranges and stoves. Feb. 9, 1883. Price 8d.

The heat from the fire passes through a flue directly to the oven, which this flue surrounds When gas is used in combination with coal the burners are applied to the top of the oven. Several other details are shown.

712. G. Ermen, Dawlish. Fireplaces. Feb. 9, 1883. Price 6d.

A pipe passes up the chimney to carry off the products of combustion, and the chimney itself acts as a hot-air chamber, the bottom of which is closed, and a pipe leads the heated air to a cylinder beneath the fire-place, whence it is distributed as required.

762. A. Coad, London. Appliances for flushing urinals. Feb. 12, 1883. Price 2d.

An oscillating vessel is suspended within the cistern, and the flush is effected by tilting the inner vessel. (*Pro. Pro.*)

803. W. Mullett, Brierley-hill. Construction of walls for buildings. Feb. 14, 1883. Price 4d.

The wall is made in two parallel parts, which are joined together at intervals by bricks which cross the space between. These bricks are arranged in a vertical series up the whole height of the wall, but a channel is made between each pair of bricks by grooves therein which form a communication between the separate spaces.

812. H. Thompson, London. Construction of domestic stoves and grates. Feb. 14, 1883. Price 6d.

The back of the grate is pivoted at the bottom, so that it can be set at any required angle. The back is counterweighted below the grate to keep it in this position.

814. J. Kaye, London. Locks and latches. Feb. 14, 1883. Price 6d.

This is an improvement on Patents No. 4,873 of 1877 and No. 1,643 of 1880, in fitting an aperture in the loose knob in which the spindle can slide, and in fixing a collar on the spindle, which presses against the lever and actuates the latch.

905. J. Dunbar, Coalbrookdale. Fire-grates. Feb. 19, 1883. Price 6d.

The panels are capable of being laterally expanded or contracted so that the grate can fit any different size of opening in the wall.

VALUE OF PUBLIC-HOUSE PROPERTY IN FARRINGDON-STREET.

At a sale of the lease of a public-house which took place last week at Masons' Hall Tavern, some novel and interesting facts were incidentally disclosed as to the increased value given to pubic-house and other property by the external walls being used for advertising purposes. The property offered for sale was the lease of the "Mail Coach" public-house in Farringdon-street, the particulars stating that it was held for an unexpired term of fifty years, at a rental of 105*l.* per annum. The auctioneer, in drawing attention to the great value of the property as an old-established place of business, observed that it was rendered still more valuable in consequence of the rental being reduced to the extent of one half, owing to one side of the house being let as an advertising station at a rental of 50*l.* per annum. There was an active competition for the property, which was sold for 4,750*l.*

Leadenhall Market.—At the meeting of the Court of Common Council on the 4th inst., Mr. J. L. Dowling moved—"That it is desirable the new street from Leadenhall-street to Fenchurch-street be completed with the least possible delay, and that it be an instruction from this Court to the City Lands Committee forthwith to take the necessary steps to carry out the unfinished section of the Leadenhall Market Act, 1879." The mover complained of the delay that had occurred in the completion of the new street. Mr. Peebles seconded the motion, and, in reply to several questions, the Comptroller (Mr. J. A. Brand) stated that the delay complained of had been occasioned by the time occupied in negotiating for the properties required. All the trade and other interests had now been acquired, with the exception of the freehold of a portion of the land, and that matter was to be referred to an umpire for decision. The motion was agreed to.

* See *Builder*, vol. xliii., pp. 224, 620. At p. 626 of the same volume will be found a view of the principal elevation.

† This is scarcely correct; it was adopted at Manchester in respect of the new Town Hall. We regret to hear that an accident has befallen Mr. Barry during his visit, and that he has broken the bone of his right shoulder.

‡ **Compiled by Hart & Co., Patent Agents, 186, Fleet-street.**

SALES OF BUILDING ESTATES.

The British Land Company have just become the purchasers, through Mr. Jackson, land agent, of Cheapside, of the West Hill Estate, situated between Wandsworth and Putney, and immediately to the north of Wimbledon Park, through which the Metropolitan District Railway is about to be extended from Putney to the London and South-Western line at Wimbledon. The Southfields Station of the intended line will be on the north-east side of the park, just before the intended railway enters it, and within about five minutes' walk of the new station. The property purchased includes the mansion on the estate and about 30 acres of land, which the British Land Company intend at once to lay out for building upon. The purchase-money is said to be at the rate of about 800*l.* an acre.

An important sale of building land at Southsea took place last week at Portsea, which shows the great value of property in that marine and suburban district of Portsmouth. The property consisted of a mansion and the grounds attached, and was offered in thirty-two lots. As indicating the class of houses to be erected on the estate, the conditions provided that no house of less value than 50*l.* a year should be erected on any plot, with the exception of five, and these were to be business premises, but no public-house. For the several plots having frontages to Castle-road, one of the most fashionable thoroughfares in the locality, there was an active competition. One plot, 50 ft. frontage and 60 ft. in depth, commenced with an offer of 20*l.* per foot frontage, and was sold for 1,550*l.* Several other lots, having frontages of 50 ft. and a depth of 84 ft., were sold at prices varying from 1,450*l.* to 1,500*l.*, three plots being sold at 30*l.* per foot frontage. Four plots, having a frontage of 20 ft. to Kent-road, and upwards of 100 ft. in depth, were sold for 450*l.* each, or at the rate of 22*l.* 10*s.* per foot frontage. Offers of 28*l.* per foot frontage were declined for several of the plots in Castle-road.

PROVINCIAL NEWS.

Llandudno.—The new pier extension, and swimming-bath and pavilion, are on the eve of completion. The first portion of the pier, which was finished in 1877, is 1,234 ft. long, all on piles. The extension landwards, which was completed last March, is 1,000 ft. long, being nearly all sea-walls. The swimming-bath, just now temporarily opened, occupies the whole space under the pavilion, and is approached by a double flight of steps from the Pier Extension, one approach for ladies and the other for gentlemen. The bath is 158 ft. long and 50 ft. wide, 7 ft. 6 in. at the deep end, and 3 ft. 10 in. deep at the shallow end; the sea water flows in and out through a 15 in. conduit-pipe with every tide. It is lighted with side windows, all opening for ventilation under four ventilating shafts, and is surrounded by a platform 14 ft. wide. Forty-four spacious dressing-boxes are at present provided, with room for ten more when needed, and it is proposed to fix a spectators' gallery down one side capable of seating 400. Provision is also made for a steam wash-house, laundry, and drying rooms; also for sixteen private baths. The pavilion, which is the principal building, is 205 ft. long, inclusive of dressing-room, 84 ft. wide, with an additional width of 20 ft. to transepts; 48 ft. high to apex of main roof, and 60 ft. to apex of the transept roof; is cruciform on plan with a 20 ft. wide gallery all round, the gallery floor being on a level with the Marine-road, which will be the carriage entrance. The stage is 50 ft. by 34 ft., with four dressing-rooms, water-closets, lavatories, &c., behind for the use of performers. The proscenium, which forms part of the plans, is 26 ft. wide, but is not carried out. On the pavilion floor are: reading room, 50 ft. long and 20 ft. wide; two cloak-rooms, refreshment-rooms, two ticket-offices, with water-closets and lavatories. On the gallery floor is a buffet 50 ft. long and 20 ft. wide, approached from the Marine-road. The general style of architecture adopted is Renaissance. The whole work has been designed and carried out by Mr. B. Nelson, architect and civil engineer, Llandudno. The cost of the whole has been about 39,700*l.* The general contractors have been Messrs. Gradwell, Barrow-in-Furness; P'Anson & Co., Darlington; Smith & Pilkington, Bacup; and Shelton & Co., Birmingham.

Reigate.—The Corporation of Reigate have adopted a scheme for the regulation and improvement of Redhill and Earlswood Commons, situate in the borough, which comprise 324 acres. The scheme owes its origination chiefly to the generosity of Messrs. W. B. Waterlow and S. Barrow, who besides defraying the expenses of the scheme up to the present time have also paid 2,000*l.* as part of the consideration money to the lord of the manor, Earl Somers. The remainder is to be paid by the Corporation of Reigate.

Dronfield.—It will be remembered that a short time ago the railway rail works of Messrs. Wilson, Cammell, & Co., were removed from Dronfield to Workington. Since then it has been decided by a local limited company to erect a blast furnace there, to work the Bull patent of manufacturing iron and steel.

DOCK EXTENSIONS.

Wisbech.—At a special meeting of the Wisbech Town Council, on the 18th ult., Mr. Abernethy, C.E., attended and explained the details of the proposed docks which the Council resolved to promote in the ensuing session of Parliament. The estimate for a six-acre dock is 143,000*l.*, and for ten acres 188,000*l.* The lock is proposed to be 250 ft. long between gates, and 50 ft. wide; depth of water over sill, 24 ft. at spring tides, and 15 ft. 6 in. at neap tides.

Cardiff.—Another large graving dock was opened on Wednesday, the 19th ult., at Cardiff by the Hills Graving Dock Company. Colonel E. S. Hill, C.B., subsequently gave a luncheon, at which he made special reference to the remarkable development of the port and to the enterprise of Lord Bute and that of his father in providing general dock accommodation. This new dry-dock is the third that has been established at Cardiff in connexion with Messrs. Charles Hill & Sons' system, which was begun in 1856 with a graving-dock on land obtained of Lord Bute near the west dock. This firm afterwards anticipated the requirements of the port by constructing a second graving-dock near the east dock, which was at that time in progress. Dowlais plates were here used for the first time in iron ships. In the spring of last year Messrs. Hill sold their Cardiff business and docks to Mr. Frederick Edwards, who formed a limited company. Colonel E. S. Hill, C.B., who had managed the undertaking, became chairman, freehold land was acquired, and on this the extensions have been carried out from designs by Mr. Thomas Hooper. The contract for the dock, which is 400 ft. long, 45 ft. broad, and having 18 ft. 6 in. water over the sill at the entrance, was given to Messrs. Logan & Hemingway. The dock is connected with the railway system of the country.

"THE GLASGOW CITY IMPROVEMENT ACT AND ITS EFFECT ON THE HEALTH OF THE INHABITANTS."*

Sir,—In an article under the above title in your issue of October 6th, you quote the opinion of Professor W. T. Gairdner, that the measures effected by the Glasgow City Improvement Act have been "eminently beneficial," and the opinion of Mr. W. G. Muir, of Glasgow," that they have been "a failure." Both opinions were expressed at the recent Glasgow Congress of the Sanitary Institute of Great Britain, and you say:—"Surely some explanation is needed of the discrepant statements contained in these two papers as to the effect of the Glasgow Improvement Act on the health of the city."

Professor Gairdner and Mr. Muir probably look very much alike at a distance of 400 miles, but I regard the opinion of the *Builder* on such a question as this as too valuable to permit it to be held in suspense from want of local knowledge. I shall best avoid the element of personality which must perforce enter into a critical estimate of the worth of Mr. Muir's views by quoting a few sentences from a leading article in our principal newspaper, the *Glasgow Herald*, Sept. 27th:—

"We do not refer merely or mainly to the nonsense which, under the title of 'The Sanitary Condition of Glasgow and the Means of Improving that Condition' Mr. G. H. Muir inflicted on the intelligent men who were too polite either to exclude his paper altogether or to refuse him a hearing during the time which its reading wasted. That it secured even the amount of attention necessary to give it a complete and incisive contradiction must be credited entirely to the courtesy and good feeling of Dr. Carpenter."

I shall not not discuss the "financial" apart from the "sanitary" success or failure. If our improvements have succeeded sanitarily they have succeeded financially, what ever the ledger may say. The Glasgow Improvement Act was passed in 1866. The demolition of houses purchased nder that Act was not begun until 1870, so that the ten years, 1861–70 and the ten years, 1871–80, will give a strictly correct comparison between Glasgow *before* and Glasgow *after* the Improvement Act:—

1861-70.		1871-80.	
1861	27·5	1871	32·9
1862	28·6	1872	28·7
1863	32·4	1873	29·1
1864	32·7	1874	31·4
1865	32·8	1875	29·3
1866	29·8	1876	26·2
1867	29·8	1877	26·1
1868	31·2	1878	26·8
1869	34·7	1879	24·2
1870	30·5	1880	26·0
Mean	31·0	Mean	28·0
1881		25·2	
1882		25·3	

It is true that in what has gone of this year we have had very high weekly death-rates, due to a severe epidemic of measles; but that has passed, and for the week in which I write our death-rate is 18. Still, in estimating sanitary results, neither the high weekly rate of 35, nor the low one of 18, must be looked to, but such long averages as those given above. As to Mr. Muir's reference to the death-rate in Glasgow and in the suburban burghs, that also is a matter which puzzles an intelligent Glasgow man as little as the death-rates of Willesden, Forest-hill, Wimbledon, &c., as compared with Whitechapel, St. Giles's, and other central districts, would puzzle a Londoner. Mr. Muir's statement as to our City Refuse Works I shall leave to the general estimate of the local newspaper. The Improvement Act is a matter of more than local interest, and, therefore, I ask you to be so good as to insert this letter.

Jas. B. Russell, M.D., Medical Officer of Health.

* Want of space compels us to use smaller type than we should otherwise.

Miscellanea.

The New Manchester Royal Eye Hospital.—Plans have been prepared by Messrs. Pennington & Bridgen, architects, of Manchester and London, for the erection of a new Royal Eye Hospital. The building, for which an excellent site has been secured at the junction of Nelson-street and Oxford-road, Chorlton-on-Medlock, is intended to accommodate 100 in-patients, and will have the extensive arrangements requisite for the daily attendance of 400 out-patients. The administration, which contains suites of apartments for the resident medical officers and the matron, board-room, secretary's room, and rooms for the medical staff, together with a spacious dining-hall, occupies the ground-floor of the Oxford-street frontage. The out-patients' department extends along Nelson-street, and has a spacious waiting-hall, registration-hall, examination-rooms, and a dispensary. The wards, on the pavilion principle, will accommodate sixty males and forty females, with all the requisite nurses' rooms, baths, &c., fitted in the most modern and approved manner. The wards are 25 ft. wide, and are divided longitudinally by dwarf wooden screens. Isolated wards are provided for infectious cases, and spacious day-rooms are arranged contiguous to the wards, with airing-courts available in fine weather. The corridors are sufficiently wide for, and are intended to be used as, ambulatories in inclement weather. Thirteen hundred cubic feet are allowed to each patient in the dormitories. The kitchen, stores, and servants' and nurses' day-rooms are in the basement, and the laundry is in a detached block in the rear of the main building. The examination and operation rooms have each due north and top lights. The building has been designed in a simple yet, from its varied outline, effective style of free Classic architecture. The structure will consist of red brick with red tiled roof, and sash-windows with transoms and movable fan-lights. Toned glass will be adopted in all the rooms used by the patients. The joiners' work will be varnished throughout, and all the corridors and staircases will be of fireproof construction.

Sanitary Engineers' Congress at Carlisle.—The annual congress of the Northern District of the Municipal and Sanitary Engineers and Surveyors' Association was held in Carlisle on the 28th ult. The members assembled in the council-chamber, Mr. H. W. McKie, Borough Surveyor of Carlisle, presiding. Papers were read by Mr. J. P. Spence, C.E., Newcastle, on "The Disposal of House Refuse," and by Mr. McKie, Carlisle, on "Matters relating to the Formation of Roadways and Footways."

New Workhouse for the Wandsworth and Clapham Union.—With reference to the report, on p. 471 of our last issue, of the meeting of the guardians of the above Union, Mr. Aldwinckle writes to say that only part of the increased cost of this building, and not by any means the largest part, was due to the cause stated, the remainder of the increase being caused by a variety of circumstances referred to in Mr. Aldwinckle's report of the guardians.

The Ancient Monuments of Egypt.—The Society for the Protection of Ancient Buildings has just issued its "Report on the Measures adopted by the Government of his Highness the Khedive for the Preservation of Monuments of Arab Art in Egypt." The report, which bears Mr. Thackeray Turner's signature, gives a sketch of the measures which have been adopted for the preservation of these beautiful monuments since the date of the first Khedivial decree of December 18th, 1881. The duties of the native Egyptian committee were to make an inventory of the monuments of really historic and artistic value; to watch over the preservation of old architectural and other relics; to examine projects of repair; and to preserve an official record of work executed. The first meeting of the Khedivial committee was held in February, 1882, but owing to the disturbed condition of the country the next was not held until a year after. One of the sub-committees appointed at the first meeting has examined, and made a list of 664 monuments in Cairo and its neighbourhood. Until the reign of the present Khedive, the architectural and other artistic monuments of Egypt have been disgracefully neglected. It is no exaggeration to say that the whole civilised world is interested in their preservation.

The Metropolitan Water Supply.—At the meeting of the Metropolitan Board of Works, on the 5th inst., Mr. Richardson moved, "That it be referred to the Works and General Purposes Committee to consider and report upon the desirability of applying to Parliament in the next session for power to prepare and submit to the Legislature a scheme for dealing with the water supply of the metropolis; and that the committee be authorised to confer with the Secretary of State for the Home Department on the subject." The water companies of the metropolis were most anxious to have the question settled, and he believed they could settle the matter on much better terms than those suggested by the late Government. Sir R. Cross sacrificed the principle of local self-government, and submitted the whole question to a private individual. Mr. Dresser Rogers seconded the motion, and remarked that he did not think it advisable to go against all the companies, as they had done formerly. He believed if Bills were introduced to ameliorate the position of water consumers they would be adopted by the House of Commons. The motion was agreed to.

The Fisheries Exhibition. — Before the close of the International Fisheries Exhibition, which is now definitely fixed to take place on the 31st of this month, it has been decided to hold another series of conferences during the closing week. Two days will be devoted to the discussion by fishermen of matters affecting their craft. The awards will be made known about the middle of this month. The diplomas, which have been executed by Messrs. Goupil, are now ready, and the gold medals will be finished in the course of a few days. In all, upwards of 3,350*l.* will be distributed in prizes. For the 600*l.* prize, offered by the executive for the best lifeboat, there are only two competitors,—the National Lifeboat Institution and Messrs. Forrest, of Limehouse. Corporations and private individuals give about 1,000*l.* in prizes.

School of Art Wood Carving, Royal Albert Hall.—The school has re-opened after the usual summer vacation, and we are asked by the Chairman of the Committee, Colonel Donnelly, R.E., to state that some of the free studentships both in the day and in the evening classes which the Committee are enabled to offer in consequence of the aid afforded to the school by the City and Guilds of London Institute are at present vacant. Orders for carving are executed at the school, designs and estimates being supplied, and the committee would be glad to co-operate with architects in the execution of designs for internal decorative wood-carving, a branch of the art which they especially desire to develope.

The Calcutta Exhibition.—In view of the expected overcrowding of Calcutta during the Exhibition, the Executive Committee have resolved, with the sanction of the Lieut.-Governor, to erect a temporary hotel furnished in camp fashion for the accommodation of the general public. The building, which will be situated on a spot on the west side of the cathedral, will be divided into a number of blocks, each of which will contain eighty private apartments and a suite of public rooms.

Powers of Vestries in regard to New Buildings.—At the meeting of the Bermondsey Vestry on the 1st inst., among the building notices was one from Mr. Almond, for new shops at Nos. 119, 121, and 123, Southwark Park-road, who, the surveyor reported, had commenced the work already. Mr. Dumphreys thought that all builders should wait for the sanction of the Vestry before commencing. The Surveyor said Mr. Almond had the sanction of the Metropolitan Board of Works, but whether he could go on without giving notice to the Vestry was an open question. The Clerk was of opinion that a magistrate would not convict in this particular case, because the man had an order from one Board which he had carried out, and although he had not delivered the notice to the second Board as soon as he ought, the Vestry approved of the drain put in. Mr. Dumphreys thought speculating builders should be taught a lesson, and in the next case he should move to take action. The Surveyor: Then you will have an opportunity at once. A notice was then received from a Mr. Blake for permission to build a house which the surveyor said was already covered in, and all but finished. Mr. Dumphreys moved that proceedings be taken, which was at once agreed to.

King's College Workshop Classes.—It is announced that the evening classes in the College workshops were resumed last week, under the superintendence of Mr. David Walker, M.I.M.E., and that additions have been recently made to the workshops, and new machine tools and instruments are being added to the plant, notably a testing-machine, by Greenwood & Batley, of Leeds, presented by the Clothworkers' Company. The entire staff of the workshop instructors attend in the evening to carpentry, cabinet-work, engine fitting and turning, turning in wood; additional instructors in these subjects, and for general smith work, are engaged for the evening classes. The workshops are also fitted with the necessary appliances for moulding and casting in brass and iron, coppersmith's and plumber's work; and special instructors are retained on five students entering for such class. The Clothworkers' Company give an annual prize of 5*l.* in books for excellence in wood work, another of 5*l.* for excellence in metal work, open to all evening class students attending three terms in the year. General and special certificates of merit are also awarded for the work of the students.

The "Homes" of Many of our Board-School Children in London would appear to be shockingly overcrowded. Mr. E. N. Buxton, Chairman of the School Board for London, last week stated that the School Management Committee lately had a report in which an analysis was made of the mode of living of the parents whose children attend Board schools near the centre of the metropolis. In one the scholars came from 313 families, and 182 of these families had only a single room each. In the second school the scholars came from 487 families, 400 of these families having but one room. In a third school the children came from 339 families, 289 of whom each lived in one room. In the majority of these cases there were five and more persons living in one room, and in some as many as nine.

The Sanitary Improvement of Workhouses.—At the meeting of the Kensington Guardians it was reported that the visitors' book contained the following entry:—"I have to-day visited the workhouse; all that came under my notice was satisfactory. The sanitary improvements which are being carried out throughout the buildings appeared to be excellent.—Lutley Jordan, 24th of August, 1883, Inspector, Local Government Board." The buildings have been thoroughly examined and the drainage and other sanitary arrangements are being re-arranged in accordance with the later canons of hygienic law. The works are being executed by Messrs J. & F. May, Holborn; Clark, Bunnett, & Co., Rathbone-place; and J. Mears, Hammersmith, under the direction of Messrs. A. & C. Harston, architects.

Eastcheap.—It is stated that Sir Henry Peek, bart., has engaged Mr. Alexander Peebles as architect for extensive new business premises in Eastcheap, the completion of the Inner Circle Railway interfering with Sir Henry Peek's present property.

Dewsbury Hospital.—The hydraulic telescopic ram lift, mentioned in our notice of this building last week, was erected by Messrs. Archibald Smith & Stevens, under Stevens & Major's patent.

Antique Rome and Modern London.—The *Nuova Antoglogia* contains an interesting comparison by Professor Lanciani, founded on history and recent excavations, between the above-named two cities. After describing their similar situation on a river, and the respective height of the soil, the author goes on to compare the superficies of ancient Rome with that of London. When Augustus recorded the administration of the city, for ancient Rome had also her "city," the buildings had so much exceeded the circle made by Servio Tullio that four of the fourteen regions into which the city was divided were entirely extra-mural. Nevertheless, the names of the old gates remained, and just as the heart of London contains its Aldersgate, Bishopsgate, &c., so Imperial Rome had its vici portæ Collinæ, Næviæ, Ruduscalanæ, &c., topographical records of a very remote time. Little by little the buildings occupied, more or less, a space the size of modern London. Professor Lanciani has arrived at this conclusion by a careful examination of the remains of the ancient city walls. —*Daily News.*

Foremen and Clerks of Works.—At the Highgate Youths' Institute it has been suggested that young men already interested in or connected with some branch of the building trade would be willing to join (and to work) in a class intended as a stepping-stone to the more responsible and better-paid positions of foremen and clerks of works. Broadly speaking, the subjects to be brought under the attention of such a class would be:—1. The interpretation or "reading" of drawings. 2. "Setting-out" work, full size, from working drawings; and cutting templets. 3. Measuring work, on the drawing, or in execution (and perhaps valuing same). 4. Taking and plotting plans and levels of sites for drainage, &c. 5. The Metropolitan Building Acts and Regulations, and the By-laws of the Hornsey Local Board. With this object a special class has been formed, to be held at the Youths' Institute, under Mr. Crisp.

The Arlberg Railway.—The making of the Arlberg Railway is proceeding with great rapidity. The tunnel is now within 1,180 mètres of completion; the boring will probably be finished by the end of October, and the line opened for traffic in the course of 1884. The total length of the great tunnel will be 10,270 mètres,—nearly 6½ miles,—and it is stated that no similar work of equal magnitude was ever before so rapidly accomplished.

Edinburgh Wholesale Meat Market Competition.—The directors of the new Meat Market Company recently had submitted to them several sets of plans, prepared by different architects, for the market to be erected in Fountainbridge and Semple-street, and they have selected those of Mr. Peter L. Henderson, architect, 122, George-street. The market is to be a commodious building, covered by an open-timber roof in two spans.

Water.—The works for the water supply of Bradford, Wilts, were formally opened on the 3rd instant by Sir Chas. Hobhouse, Bart., Chairman of the Town Commissioners. A general holiday was observed in the district, the town being gaily decorated on the occasion. A banquet took place in the Town Hall in the evening. The works were designed and carried out by Mr. Robinson, C.E., of Westminster.

The Cork Exhibition.—We learn that Mr. Richard Q. Lane, of the Ann-street Iron Works, Belfast, has been commissioned by the Executive Committee of the Cork Exhibition to design their "Certificate of Merit." It is to be in character with the Prize Medal, also designed by Mr. Lane. The certificate will measure about 20 in. by 17 in., and will be surrounded by an elaborate border characteristic of the Celtic style of ornament.

The Social Science Congress at Huddersfield came to a conclusion on Wednesday last, when it was announced that the Council had accepted an invitation from the Mayor and inhabitants of Birmingham to hold the Annual Congress of the Association in 1884 in that borough from the 17th to the 24th of September.

The Cost of Lifting by Hydraulic Power. In the abstract of Mr. Ellington's paper on the supply of hydraulic power, published in our last issue (p. 468), it was stated that the cost to consumers for lifting by the public hydraulic power is from 1s. 2d. to 3s. 4d. per ton lifted 50 ft. This was a misprint for one half-penny (½d.) to three farthings (¾d).

Thames Valley Sewerage. — Another attempt has been made to solve the problem of disposing of the sewage of the Lower Thames Valley, a subject which has been for many years under the consideration of the Lower Thames Valley Main Sewerage Board, the question having also several times occupied the attention of Parliament. In their desire to comply with the requirements of the Local Government Board, which they have hitherto failed to satisfy in the matter, the Joint Sewerage Board has obtained the assistance of Mr. James Mansergh, C.E., and Mr. J. C. Melliss, C.E., whose report upon the subject was considered in committee by the Board a few days ago, and the details of which have been made public. The report states that "total diversion and simple irrigation being eliminated from the question, the most important point to determine was that of the site or sites for the treatment of the sewage." The committee have arrived at the conclusion that it is better to have only one place for the treatment of the whole of the sewage of the district than to have several places. The second conclusion they have arrived at is that this one spot must be on the banks of the Thames, the "natural drain" of the whole district. The report continues:—"There are only three places to select from,—namely, first, the Soap Works site, at Barnes; second, a piece of market garden on the Surrey side of the river between Mortlake and Kew; and, third, some part of Ham Fields below Teddington Lock. . . . . The cost of the respective sites is estimated as follows:—Mortlake site, total for works, 276,647*l.*, the total annual charges upon which would be 25,534*l.*, to meet which a rate of 8·04d. in the pound would be required; Barnes site, total for works, 323,814*l.*, annual charges 28,112*l.*, requiring a rate of 8·85d. in the pound; Ham Fields site, total for works, 237,634*l.*, annual charges 23,597*l.*, requiring a rate of 7·34d. in the pound." A committee of the Joint Sewerage Board has been formed to ascertain on what terms certain sites can be obtained.

The Indian Public Works Department. A *Times* telegram from Calcutta says that the committee lately appointed to consider the re-organisation of the Public Works Department has recommended the adoption of the Secretary of State's proposal, with certain modifications. Among these are the payment of pensions in conventional sterling, increased pensions to executive engineers who are compulsorily retired, and the extension of the new furlough rules to all the members of the Department. The committee express the opinion that the emoluments of the civil and military members of the Department should be equalised, and the Department reconstituted on a purely civil basis.

French Palaces, and other Essays.—Under this title Mr. Robert Hannay will issue a volume of papers on literary and historical subjects. It will be published by Mr. Elliot Stock.

TENDERS.

For new roads, sewers, surface-water drains, &c., on the British Land Company's Estate, at Bedford. Mr. Henry B. Michell, surveyor:—

Nowell & Robson, Kensington	£2,495 0 0
Keeble, Regent's Park	2,286 0 0
Harris, Camberwell	2,222 0 0
Killingback, Camden Town	2,179 0 0
Bloomfield, Tottenham	2,150 0 0
Peill & Sons, Bromley, Kent	2,088 0 0
Pizzey, Hornsey	2,025 0 0
Wilson, Walthamstow	1,997 0 0
J. Jackson, Leyton (accepted)	1,966 0 0

For new roads, sewers, surface water drains, &c., on the British Land Company's Estate, at Norwood Junction. Mr. Henry B. Michell, surveyor:—

Nowell & Robson, Kensington	£2,637 0 0
Harris, Camberwell	2,492 0 0
Killingback, Camden Town	2,470 0 0
Keeble, Regent's Park	2,386 0 0
Wilson, Walthamstow	2,314 0 0
Bloomfield, Tottenham	2,225 0 0
Jackson, Leyton	2,200 0 0
Pizzey, Hornsey	2,150 0 0
Peill & Sons, Bromley, Kent *	2,098 0 0

* Accepted.

For alterations and additions to Paddock Villas, Edgware-road, Kilburn, for Messrs. Michell & Phillips. Mr. A. R. Barker, architect:—

J. G. Egan & Co.	£2,397 10 0
W. Rogers (accepted)	2,349 0 0
E. Van Camp	2,275 0 0
Handover & Brown	2,243 0 0

For decorations, &c., to be done at 40, Lowndes-street, Lowndes-square. Messrs. Glasier & Sons, surveyors:—

S. G. Bird	463 0 0
Haward Bros.	418 0 0
Kinninmont & Sons	397 0 0
Clarke & Manncoch (accepted)	392 0 0

For Cremorne Schools, Chelsea Division, for the School Board for London. Mr. E. R. Robson, architect. Mr. W. H. Barber, surveyor:—

W. H. Smith	£13,940 0 0
Langmead & Way	12,495 14 4
A. Thorn	12,093 17 0
C. Webber	11,997 0 0
Farrant & Son	11,505 0 0
Holloway	11,482 0 0
Atherton & Latta	11,317 0 0
F. Higgs	11,300 0 0
W. Oldrey	11,246 0 0
Lathey Bros.	10,990 0 0
Shurmur	10,989 0 0
C. Cox	10,986 0 0
J. Smith	10,863 0 0
W. Reading	10,800 0 0
Stimpson	10,671 0 0
Kirk & Randall	10,653 0 0
Patman & Fotheringham	10,389 0 0
W. T. Niblett	10,347 0 0
M. Manley	10,344 0 0
F. Croaker	10,332 0 0
W. Brass	10,309 0 0
S. J. Jerrard	10,298 0 0
W. Scrivener	10,273 0 0
H. Hart	10,272 0 0
C. Wall	10,224 0 0

For Mantle-road Schools, Greenwich Division, for the School Board for London. Mr. E. R. Robson, architect. Messrs. Northcroft, Son, & Neighbour, architects:—

Perry & Co.	£9,947 0 0
W. Brass	9,856 0 0
Nightingale	2,754 0 0
F. Sargeant	9,675 0 0
C. Reading	9,480 0 0
H. Hart	9,358 0 0
Patman & Fotheringham	9,300 0 0
J. H. Farrant & Sons	9,300 0 0
Lathey Bros.	9,254 0 0
Langmead & Way	9,220 0 0
J. Oliver	9,190 0 0
W. & F. Croaker	9,174 0 0
J. Marsland	9,105 0 0
C. Wall	9,089 0 0
F. Higgs	9,065 0 0
J. Grover	8,991 0 0
W. Shurmur	8,982 0 0
S. J. Jerrard	8,779 0 0
Kirk & Randall	8,739 0 0
Lonergan Bros.	8,720 18 0
W. Scrivener	8,660 0 0
Stimpson	8,637 0 0
J. Smith	8,626 0 0
W. Shepherd	8,623 0 0
Atherton & Latta	8,610 0 0

For Union-street Schools, Greenwich Division, for the School Board for London. Mr. E. R. Robson, architect. Messrs. Northcroft, Son, & Neighbour, architects:—

Perry & Co.	£8,358 0 0
Brass	8,349 0 0
B. E Nightingale	8,165 0 0
H. Hart	8,083 0 0
Reading	8,067 0 0
Langmead & Way	8,023 0 0
Patman & Fotheringham	7,900 0 0
Lathey Bros.	7,889 0 0
W. T. Niblett	7,867 0 0
Croaker	7,849 0 0
J. Grover	7,730 0 0
C. Wall	7,714 0 0
S. J. Jerrard	7,593 0 0
W. Tongue	7,563 0 0
Higgs	7,530 0 0
J. Smith	7,464 0 0
M. Manley	7,442 0 0
Atherton & Latta	7,440 0 0
Scrivener	7,399 0 0
J. H. Farrant	7,389 0 0
Kirk & Randall	7,375 0 0
Shepherd	7,321 0 0
Lonergan Bros.	7,275 0 0
F. Johnson	7,238 0 0
Stimpson	7,103 0 0

For New Theatre, Northampton, for Mr. J. C. Franklin. Mr. C. J. Phipps, architect, London. Quantities by Mr. C. Dorman, Northampton:—

Foster & Dicksee, Rugby	£6,384 0 0
Branson & Son, Northampton	5,825 0 0
Archer & Brown, Northampton	5,700 0 0
Ireson, Northampton	5,655 0 0
Smith Bros., Northampton	5,525 0 0
Reynolds & Son, Northampton	5,475 0 0
Green Bros., Northampton	5,475 0 0
Woodford & Sons, Northampton	5,290 0 0
Wingrove, Northampton	5,260 0 0
Martin, Northampton (accepted)	4,970 0 0

For additions and alterations to Messrs. Hayward Bros. & Eckstein's premises, Union-street, Southwark. Messrs. Henry Jarvis & Son, architects, 29, Trinity-square, Southwark:—

E. Lawrance	£2,370 0 0
W. S. Josolyne	3,370 0 0
J. W. Falkner	2,325 0 0
T. Rider & Son	2,288 0 0
H. Burman & Son	2,197 0 0
Canning & Mullins	2,067 0 0
R. Conder	2,050 0 0

For proposed villa residence, St. Peter's-park, St. Albans Herts, for Miss Christian Morant. Mr. T. Foster Woodman, architect, St. Albans and Hemel Hempstead. Quantities not supplied:—

Sparrow, St. Albans	£760 0 0
Mead, St. Albans	740 0 0
Austen, St. Albans	739 0 0
Pratt, St. Albans	676 0 0
Miskins, St. Albans	647 0 0
Savage, St. Albans	639 0 0

For the erection of billiard-room and coach-house, and alterations to bar at the Horse and Groom, Streatham-hill, for Mr. J. W. Pettingell. Mr. E. L. Swatman, architect, 38, Parliament-street:—

		Alterations.
Walker	£715 0 0	——
Deacon	695 0 0	£180 0 0
Le Gassick & Co.	615 0 0	183 0 0

For the erection of a new drying-shed, offices, &c., and repairs to cottage adjoining, in Galleywall-road, South Bermondsey. Mr. Crosse, architect, 32, Bermondsey-square:—

B. Wells	£620 0 0
Whitaker	595 0 0
T. & F. Drake	592 0 0
W. Brockwell	517 5 0
J. Almond	491 0 0
J. Bullers (accepted)	440 0 0

For building new school at Cross-street Chapel, Islington. Messrs. Searle & Hayes, architects:—

S. Wontner Smith, Islington	£910 0 0
J. Grover, Islington	882 0 0
L. H. & R. Roberts, Islington	847 0 0
J. Woodward, Finsbury	750 0 0
Dearing & Son, Islington	750 0 0
Wilson & Exton, Hoxton	712 0 0

For new warehouse for Messrs. Clark, Hunt, & Co. Mr. W. Birdseye, architect:—

Gaisford	£1,602 0 0
J. Grover	1,568 0 0
Ward	1,563 0 0
R. Conder	1,477 0 0
W. Shurmur	1,395 0 0
C. Marr	1,382 0 0
T. Boyce	1,373 0 0

For the erection of house and shop, Godstone-road, Caterham Valley, for Mr. William Edmunds. Mr. Fredk. Elliff (successor to Mr. Richard Martin), architect, Caterham:—

Loe & Son, Addiscombe	£1,144 0 0
W. Thompson, Caterham Valley	1,135 0 0
Masters & Sons, Anerley	1,060 0 0
R. Ward, Warlingham (accepted)	1,050 0 0

For the erection of semi-detached villas, East Grinstead, Sussex. Mr. Thorold Lowdell, architect, 9, Great James-street, Bedford-row, London:—

Allen & Sons, London	£1,750 0 0
Godly, East Grinstead	1,440 0 0
Charlwood Bros., East Grinstead *	1,284 0 0
Head Bros., Lingfield	1,281 0 0

* Accepted.

For three cottages, Baldwyn's-hill, East Grinstead, Mr. Thorold Lowdell, architect, 9, Great James-street, Bedford-row, London:—

Godly (accepted)	£410 0 0

For repairs and painting at 10, Goldsmid-road, Brighton. Mr. Thorold Lowdell, architect, 9, Great James-street, Bedford-row, London:—

Parsons	£142 10 0
Bruton	132 10 0
Barnes (accepted)	133 0 0

For alteration to roof, forming additional story, painting, &c., to 49, Cheyne-walk, Chelsea, S.W., for Mr. Joplin. Mr. Thorold Lowdell, architect, 9, Great James-street, Bedford-row, London:—

First Design.

Doughty	£231 0 0
Pyle & Co.	192 0 0

Second Design.

Pyle & Co. (accepted)	£245 0 0

For alterations and additions to a house in Parkside, Wimbledon Common. Mr. Godfrey Pinkerton, architect:—

Ashby Bros.	£4,487 0 0
E. Conder	4,278 0 0
Adamson & Sons	4,249 0 0
F. Pain	4,238 0 0
R. Aviss & Co. (accepted)	4,060 0 0

For alterations and repairs at the Cogers' Hall, Salisbury-court, Fleet-street, for Mr. T. Swift, proprietor:—

No. 1 Contract.

Gower & Pettipher (accepted)	£232 10 0

No. 2 Contract.

Gower & Pettipher (accepted)	£175 0 0

For alterations at 21, Warwick-square. Mr. Edward Power, architect:—

Oldis Bros.	£646 0 0
Hill & Berridge	598 0 0
Burch & Moor	571 0 0
G. S. Pritchard	558 10 0

For alterations and repairs to cottages on the property of Mr. T. J. Mann, Bishops Stortford. Mr. A. R. Barker, architect:—

W. Cornwell	£437 0 0
J. & A. Franklin (accepted)	426 0 0

For alterations and additions to Wellswood, Torquay, for Admiral Ryder. Mr. A. R. Barker, architect:—

W. A. Goss, Torquay (accepted)	£1,969 17 0

For alterations and additions to Varnell's Cottage, Hambleden, for Admiral Ryder. Mr. A. R. Barker, architect:—

E. L. Millington (accepted)	£255 19 4

For alterations and additions to King's Somborne Vicarage, Hants. Mr. A. R. Barker, architect:—

C. Wilks, North Waltham	£774 14 0
H. A. Annett & Son, Andover	746 9 6

For the restoration of the parish church of All Saints, Newchurch, Isle of Wight. Mr. A. R. Barker, architect:—

Norton & Moses (accepted)	£565 0 0

For the erection of new Sunday school at Bowes Park, Wood-green. Mr. A. R. Barker, architect:—

J. Wheeler, Winchmore-hill	£1,884 10 0
W. Gardener, Waltham Abbey	1,280 10 0
Patman, Enfield (accepted)	1,253 0 0

For completion of The Management House at St. Thomas's Home, Basingstoke. Mr. A. R. Barker, architect. Quantities by Messrs. J. S. Lee & Son:—

H. J. Goodall, Basingstoke *	£808 0 0

* Accepted.

For fitting up shop and warehouse, High-street, Beckenham, for Mr. R. H. Howes, Streatham:—

Le Gassick & Co. (accepted).

For alterations and additions to Wain Fawr and Machen schools, Newport, Mon., for the Machen School Board. Mr. E. A. Lansdowne, architect:—

Wain Fawr Schools.

W. Rosser, Risca	£498	0	0
S. B. Moore, Newport	465	0	0
J. Jones, Newport (accepted)	453	0	0

Machen Schools.

J. Jones, Newport	£578	0	0
S. B. Moore, Newport	563	0	0
T. Phillips, Machen (accepted)	478	0	0

For the construction of a footway at Stoke Newington Common for the Incorporated Society of Licensed Victuallers. Mr. H. I. Newton, architect, 27, Great George-street:—

Royal (accepted).

For alterations at the Five Alls, Battersea Park-road, for Mr. C. Lacely. Mr. H. I. Newton, architect:—

Cook	£193	10	0
Lamble	193	0	0
Walkley	138	0	0
Waterer & Byford (accepted)	113	0	0

For new road and sewers at Finchley, for the trustees of the late Mr. H. Stephens. Mr. John Cree, surveyor:—

J. Bell, Wood Green (accepted).

For sewer outfall extension, Old Park Estate, Enfield. Messrs. Hickson & Son, surveyors:—

J. Bell, Wood Green (accepted).

For the enlargement of St. Michael's Church, Ipswich. Mr. E. F. Bisshopp, architect:—

R. Tooley	£1,830	0	0
R. Girling	1,798	0	0
R. S. Smith	1,747	17	0
C. A. Wyatt	1,728	0	0

For detached cottage, Denzil-road, Guildford. Messrs. Peak, Lunn, & Peak, architects:—

T. E. Downes, Guildford	£370	0	0
Billimore & Smith, Guildford	325	0	0
Harms, Woking	315	0	0
G. & R. Smith, Guildford	301	0	0
E. Elliott, Guildford	285	0	0
Tribe & Robinson, Guildford *	283	9	6

* Accepted.

For row of six cottages, Cemetery-road, Stoughton, proprietors finding bricks and tiles. Messrs. Peak, Lunn, & Peak, architects:—

G. & R. Smith, Guildford	£835	0	0
H. Christmas, Ripley	775	0	0
E. Elliott, Guildford	759	0	0
F. Frampton, Guildford	689	10	0
A. Robins & Sons, Farnham	550	0	0

For boundary-walling, Epsom and Sydenham roads for Mr. W. Wells. Messrs. Peak, Lunn, & Peak, architects:—

R. Pink, Milford	£214	10	0
G. & R. Smith, Guildford	224	0	0
Martin, Wells, & Co., Aldershott	200	0	0
Garnett & Mills, Guildford (accepted)	179	0	0
E. Elliott, Guildford (withdrawn)	126	0	0

For alterations at the old British School premises, Guildford, for the Gulldford School Board. Messrs. Peak, Lunn, & Peak, architects:—

E. Elliott, Guildford	£283	16	0
Burdett & Son, Guildford	259	9	9
H. Lunn, Guildford (accepted)	205	5	0

For building two houses, stabling, &c., at Venner-road, Sydenham, for Mr. J. W. Kay. Messrs. Tolley & Son, architects, 66, Cannon-street:—

Faulkner, London	£3,765	0	0
Walker, Catford	3,183	0	0
Manenjale, Croydon	3,010	0	0
J. Olley, Forest Hill	2,880	0	0
Smith, Sydenham	2,267	0	0

For building a new branch bank at Brentwood, Essex, for the London and County Banking Company. Mr. Zep. King, architect, 3, Victoria-street. Quantities supplied by Mr. Jas. Schofield, 8, Southampton-street, Bloomsbury:—

Rider & Son	£3,328	0	0
Winter Bros.	3,325	0	0
Cross	3,102	0	0
Blyth	3,098	10	0
Shurmur	2,988	0	0
J. S. Hammond, Romford (accepted)	2,987	0	0

For the erection of a greenhouse at Shrogg's Park, Halifax, for the Corporation:—

Messenger & Co., Loughborough *	£490	0	0

* Accepted.

For new floor, &c., to Tun Room, for City of London Brewery Co. Mr. J. Jewhurst, architect:—

W. Spencer	£525	0	0
W. Shurmur	495	0	0
Jackson & Todd	469	10	0
Langmead & Way	398	0	0

For alterations and additions at High-street, Kensington, for Messrs. Derry & Toms. Mr. G. G. Stanham, architect:—

Aviss	£995	0	0
J. Hearle & Son	£992	0	0
W. Shurmur	981	0	0
Adamson & Son	981	0	0
Turtle & Appleton	972	0	0
Cawley	877	0	0

For villa at Woodford. Mr. R. W. Crawley, architect:—

Eaton, late Reed & Son	£1,375	0	0
Alexander, Bow	1,374	0	0
Hoskins, Forest-gate	1,367	0	0
Robson, Woodford	1,246	0	0
W. Shurmur, Clapton (accepted)	1,200	0	0

To Contributors and Correspondents.

All Letters and Communications referring to Literary and Artistic Matters must be addressed—

"*To the Editor of* The Builder,
46, *Catherine-street,*
Covent Garden, W.C.,"

And not to any individual by name.

Gossip.—H. R.—J. & Sons.—Whiston.—L. M.—W. C.—C. D. & Son.—E. C.—G. P.—J. H. G.—G. & P.—J. J.—A. R. H.—T. A.—E. P.—W. E. M.—H. B. M.—R. Q. L.—Le G. & Co.—C. J. P.—E. G.—J. H.—Major B.—C. W.—W. S.—J. W. C.—E. A. L.—C. F.—B. H. S.—W. M.—A. W. B.—A. R H.—M. M.—A. V.—M. S.—B. P. S.—G. S.—D. S. D.—P. L. & P.—D. J. M.—W. M.—J. A. O.—W. Son & A.—E. C.—C. B.—T. R. R. (send particulars to accompany view and plans).—H. P. (a file of the *Builder* can be seen at the publishing office).—J. B. F. C. (take advice on the spot).—Victas (we cannot reply on *ex parte* information).

Correspondents should address the Editor, and *not* the Publisher, except in cases of business.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

Note.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

NOTICE TO ADVERTISERS.

Persons advertising in the *Builder* may have REPLIES ADDRESSED TO THE OFFICE, 46, Catherine-street, Covent-garden, W.C., FREE OF CHARGE.

Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage.

CHARGES FOR ADVERTISEMENTS.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE, AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for Series of Trade Advertisements, also for Special Advertisements on front page, Competitions, Contracts, Sales by Auction, &c. may be obtained on application to the Publisher.

SITUATIONS WANTED.

FOUR Lines (about THIRTY words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must not* be sent, but all small sums should be remitted by Cash in Registered Letter or by Money Order, payable at the Post-office, Covent-garden, W.C. to

DOUGLAS FOURDRINIER, Publisher,
Addressed to No. 46, Catherine-street, W.C.

Advertisements for the current week's issue must reach the Office before THREE o'clock p.m. on THURSDAY.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to Advertisements, and strongly recommends that of the latter COPIES ONLY should be sent

TERMS OF SUBSCRIPTION.

"THE BUILDER" is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum, PREPAID. Remittances payable to DOUGLAS FOURDRINIER, Publisher, 46, Catherine-street, W.C.

Best Bath Stone.
WESTWOOD GROUND,
Box Ground, Combe Down,
Corsham Down,
And Farleigh Down.
RANDELL, SAUNDERS, & CO., Limited,
Corsham, Wilts. [Advt.

Bath Stone.
Facilities for selection and quality unequalled, having upwards of
350,000 Feet Cube
In Stock of all known descriptions.
PICTOR & SONS, Box, Wilts. [Advt.

Doulting Freestone and Ham Hill Stone of best quality, in blocks, or prepared ready for fixing. An inspection of the Doulting Quarries is respectfully solicited; and Architects and others are CAUTIONED against inferior stone. Prices, delivered to any part of the United Kingdom, given on application to CHARLES TRASK, Norton-sub-Hamdon, Ilminster, Somerset. — Agent, Mr. E. WILLIAMS, 73, Charlotte-street, Portland-place, W. [Advt.

Doulting Freestone,
HAM HILL STONE,
BLUE LIAS LIME
(Ground or Lump),
Of best quality, supplied from their own Quarries and Kilns by Staple & Hann, Stoke, Ilminster. Agent, Mr. H. Mitchell, 5, Augustus-road, Hammersmith, London, W. [Advt.

Asphalte.
Seyssel, Patent Metallic Lava, and White Asphaltes.
M. STODART & CO.
Office:
No. 90, Cannon-street, E.C. [Advt.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. [Advt.

Immense quantities of
DRY WAINSCOT,
DRY MAHOGANY,
DRY WALNUT,
in all thicknesses.
B. J. HUDSON & SONS,
Whitfield-st., W., and Great Peter-st., S.W. London. [Advt.

J. L. BACON & CO.,
MANUFACTURERS OF IMPROVED
STEAM AND HOT-WATER APPARATUS,
FOR WARMING AND VENTILATING
Private Houses, Churches, Schools, Hospitals, Manufactories, Greenhouses, &c.
OFFICES AND SHOW-ROOMS:—
No. 34, UPPER GLOUCESTER PLACE, DORSET SQUARE, LONDON, N.W.
And at DUBLIN, BELFAST, GLASGOW, and NEWCASTLE.
Illustrated Pamphlet on "Heating" post free.

CHAPPUIS' PATENTS FOR REFLECTING LIGHT.

DAYLIGHT REFLECTORS OF EVERY DESCRIPTION,

ALSO

ARTIFICIAL LIGHT REFLECTORS.

WHY BURN GAS?—CHAPPUIS' REFLECTORS DIFFUSE DAYLIGHT.—They are exclusively adopted by and fitted at Buckingham Palace, all H.M. Government Offices, Houses of Parliament, H.M. First Commissioner of Works, the Metropolitan Board of Works, British Museum, South Kensington Museum, Royal Institution, Guildhall Museum, on board H.M. Ships, also Railway Companies' Offices, Hospitals, Institutions, Banks, Insurance Offices, Manufactories, Private Houses and generally from Noblemen's Mansions to Artisans' Workshops. 30,000 in use in London alone. Patronised by leading Architects, Engineers, Contractors, &c., &c.

N.B.—For Prospectuses and Diagrams, address Stamped Envelope to

P. E. CHAPPUIS, Patentee and Manufacturer, 69, FLEET-STREET, LONDON.

NOTICE.—The POLYGONAL REFLECTOR (Latest Patent) FOR ARTISTIC and PICTURE GALLERIES.
Its construction allows of the angle of light being readily altered so as to reflect in any desirable direction.